ADDENDUM TO FC02-080

FOR THE

CABLE MODEM GATEWAY, SBG 1000 P5

FCC PART 15 SUBPART C SECTIONS 15.207 AND 15.247
AND SUBPART B SECTIONS 15.107 AND 15.109 CLASS B

COMPLIANCE

DATE OF ISSUE: NOVEMBER 1, 2002

PREPARED FOR:

Motorola BCS
6450 Sequence Drive
San Diego, CA 92121

PREPARED BY:

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Date of test: August 7-21, 2002

Report No.: FC02-080A

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ADMINISTRATIVE INFORMATION

DATE OF TEST:	August 7-21, 2002
DATE OF RECEIPT:	August 7, 2002
PURPOSE OF TEST:	To demonstrate the compliance of the Cable Modem Gateway, SBG 1000 P5, with the requirements for FCC Part 15 Subpart C Sections 15.207 and 15.247 and Subpart B Sections 15.107 and 15.109 Class B devices. The purpose of Addendum A is to revise the outpower on pages 6, 13 and 25.
TEST METHOD:	ANSI C63.4 (1992)
MANUFACTURER:	Motorola BCS 6450 Sequence Drive San Diego, CA 92121
REPRESENTATIVE:	Daniel Exum
TEST LOCATION:	CKC Laboratories, Inc. 110 Olinda Place Brea, CA 92621

SUMMARY OF RESULTS

As received, the Motorola BCS Cable Modem Gateway, SBG 1000 P5 was found to be fully compliant with the following standards and specifications:

United States

- FCC Part 15 Subpart B Sections 15.107 and 15.109 Class B
- FCC Part 15 Subpart C Sections 15.207 and 15.247
- ANSI C63.4 (1992) method

CONDITIONS FOR COMPLIANCE

No modifications to the EUT were necessary to comply.

APPROVALS

QUALITY ASSURANCE:

Steve Behm, Director of Engineering Services

Joyce Walker, Quality Assurance Administrative Manager

Septimiu Apahidean, EMC/Lab Manager

TEST PERSONNEL:

Stuart Yamamoto, EMC Engineer

EQUIPMENT UNDER TEST (EUT) DESCRIPTION
The Cable Modem Gateway tested by CKC Laboratories was representative of a production unit.

15.31(e) Voltage Variations

Equipment setup: The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The F connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through ms dos. The dolch computer is running the TFTPD32 program. The active antenna port is connected to the Agilent E4440A spectrum analyzer.

	Power at Nominal Voltage (dBm)	Power at 85% Nominal Voltage (dBm)	Power at 115% Nominal Voltage (dBm)
Channel 1	15.04	15.04	15.04
Channel 6	14.56	14.56	14.56
Channel 11	14.16	14.16	14.16

Testing performed at antenna terminal

15.31(m) Number Of Channels
This device operates on 11 channel.

15.33(a) Frequency Ranges Tested
15.109/15.247 Radiated Emissions: 9 kHz – 25 GHz
15.207/15.107 Conducted Emissions: 450 kHz – 30 MHz

FCC SECTION 15.35: ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	450 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	25 GHz	1 MHz

15.203 Antenna Requirements
The antenna is removable but has a unique connector; therefore the EUT complies with Section 15.203 of the FCC rules.

15.205 Restricted Bands

The fundamental operating frequency lies outside the restricted bands and therefore complies with the requirements of Section 15.205 of the FCC rules. Any spurious emission coming from the EUT was investigated to determine if any portion lies inside the restricted band. If any portion of a spurious emissions signal was found to be within a restricted band, investigation was performed to ensure compliance with Section 15.209.

Mode Of Operation

The EUT was configured by the manufacturer to operate in a continuous transmit mode for testing purposes. The EUT is normally in continuous mode with CW signal.

Eut Operating Frequency

The EUT was operating at 2412-2462 MHz.
The Eut is a direct sequencing device operating in the 2400 – 2433.5 MHz band.

EQUIPMENT UNDER TEST

Cable Modem Gateway
Manuf: Motorola BCS
Model: SBG 1000 P5
Serial: 00080ED2F1E0
FCC ID: pending

PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

C6U Converter
Manuf: General Instruments
Model: C6U
Serial: J5M7000101358
FCC ID: DoC

Hub
Manuf: Bay Networks
Model: DS104
Serial: DS14H08355155
FCC ID: DoC

Computer
Manuf: Dolch
Model: L-PAC 585
Serial: DCS2016538
FCC ID: DoC

Mouse
Manuf: Gateway
Model: MOSXK
Serial: NA
FCC ID: DoC

Computer
Manuf: Toshiba
Model: PA1215UV
Serial: 04694236
FCC ID: DoC

Thermal Printer
Manuf: SII
Model: DPU-414
Serial: 1033083A
FCC ID: DoC

Keyboard
Manuf: Dell
Model: SK-1000RS
Serial: M940111179
FCC ID: DoC

Computer
Manuf: Gateway
Model: G6-366C
Serial: 0013168086
FCC ID: DoC

Monitor

Manuf:	NEC
Model:	JC-1538VMA
Serial:	5900265EA
FCC ID:	DoC

Head End

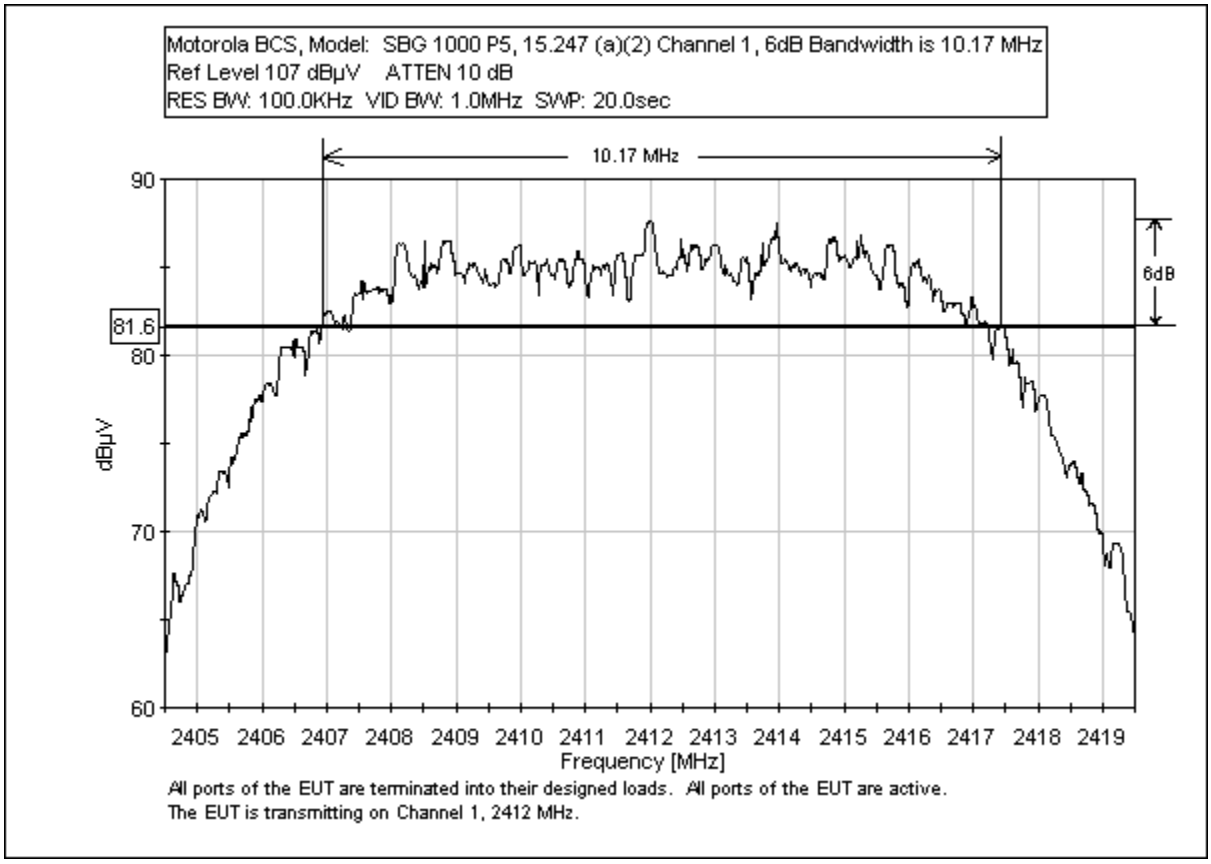
Manuf:	Cisco
Model:	uBR-MC11C
Serial:	CN1ISS0AA
FCC ID:	DoC

Parallel Printer

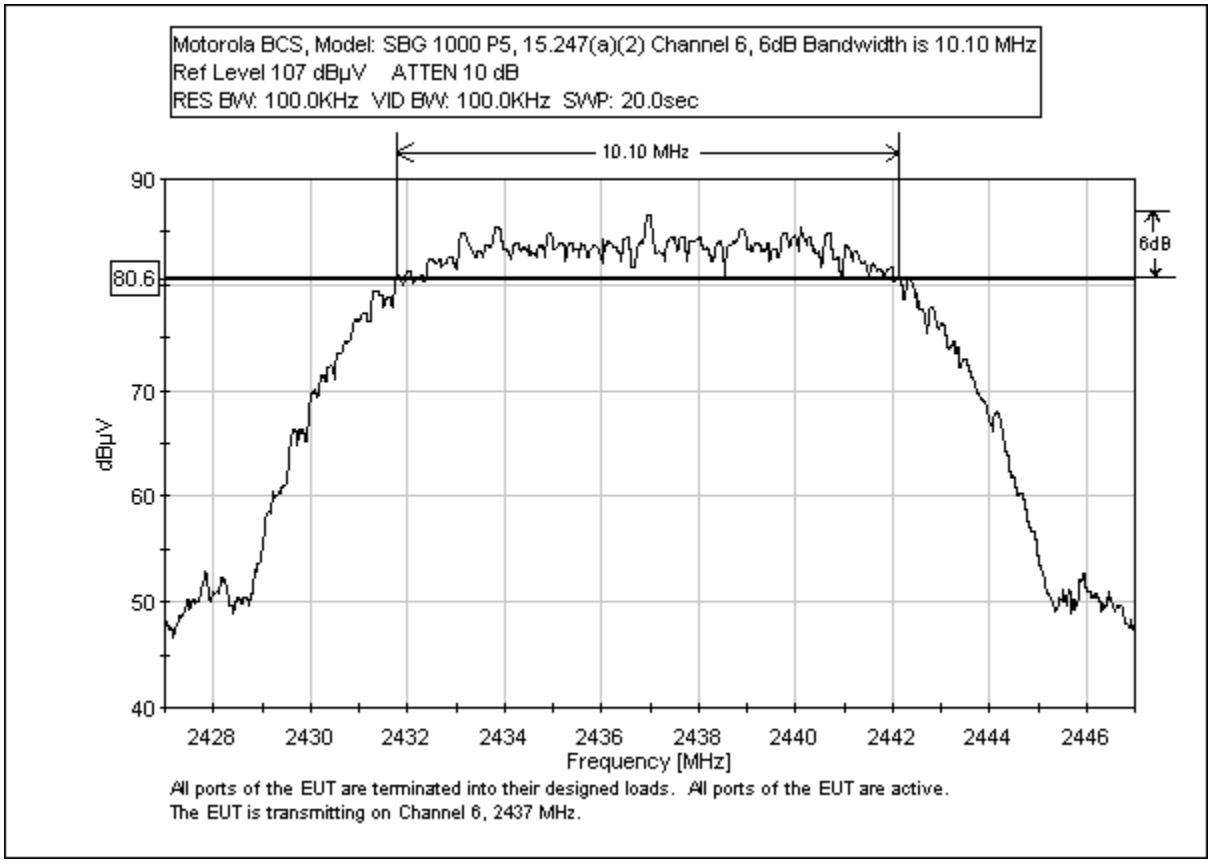
Manuf:	Epson
Model:	P156A
Serial:	CMR1545596
FCC ID:	DoC

REPORT OF MEASUREMENTS

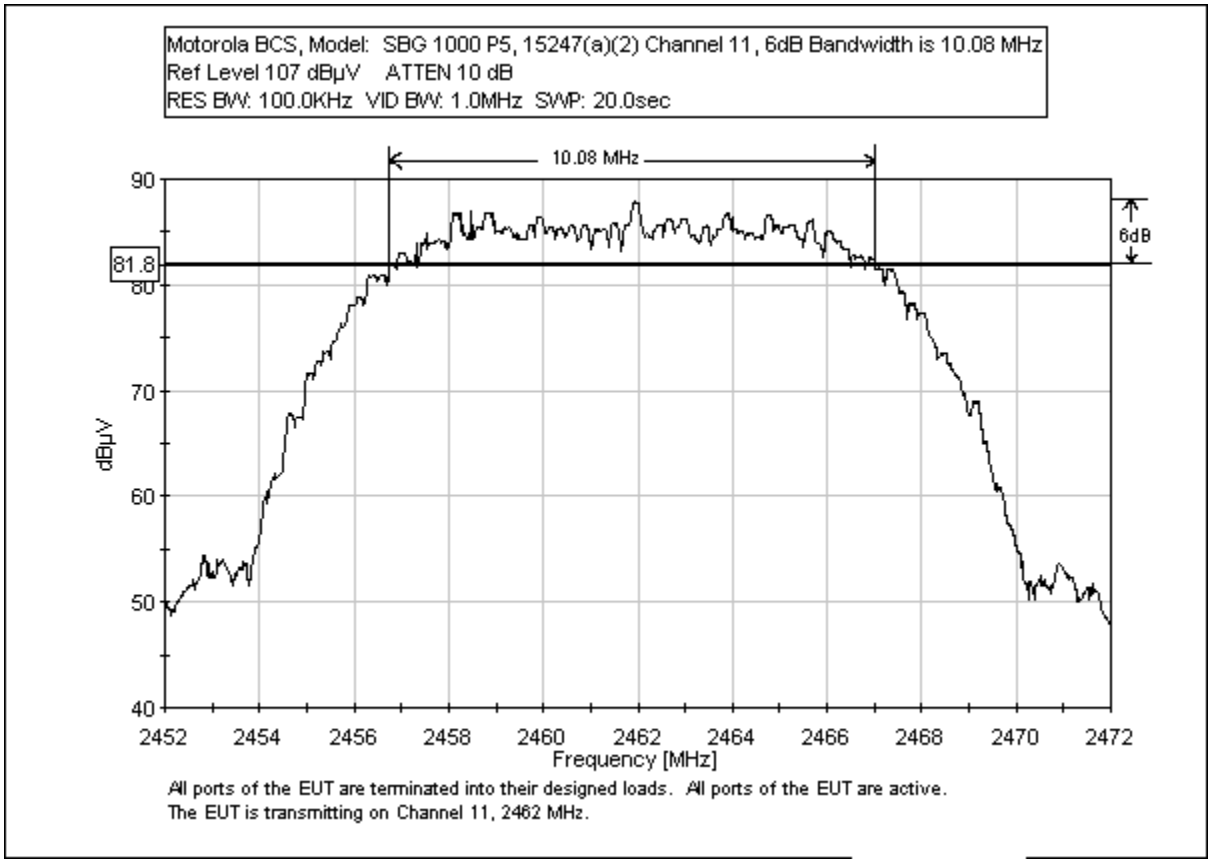
15.247(a)(2) 6 dB BANDWIDTH PLOTS – Direct Sequence
CHANNEL 1



6 dB BANDWIDTH - CHANNEL 6



6 dB BANDWIDTH - CHANNEL 11



15.247(b)(1) Peak Output (EIRP)

Equipment Setup: The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The F connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through ms dos. The dolch computer is running the TFTPD32 program. The active antenna port is connected to the Agilent E4440A Spectrum analyzer.

	Frequency (GHz)	Spectrum analyzer Measurement (dBm)	BW Correction Factor (dB)	Corrected Reading (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result Pass/Fail
Channel 1	2.412	13.66	1.38	15.04	2.5	17.54	30	Pass
Channel 6	2.437	13.18	1.38	14.56	2.5	17.06	30	Pass
Channel 11	2.462	12.78	1.38	14.16	2.5	16.6	30	Pass

15.247(b)(1) Peak Output (Conducted)

Equipment Setup: The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The F connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through ms dos. The dolch computer is running the TFTPD32 program. The active antenna port is connected to the Agilent E4440A spectrum analyzer.

	Frequency (GHz)	Spectrum analyzer Measurement (dBm)	BW Correction Factor (dB)	Corrected Reading (dBm)	Limit (dBm)	Result Pass/Fail
Channel 1	2.412	13.66	1.38	15.04	30	Pass
Channel 6	2.437	13.18	1.38	14.56	30	Pass
Channel 11	2.462	12.78	1.38	14.16	30	Pass

Note: BW corr = 10*10Log (Emission BW/measurement BW)
BW Corr = 10 *10Log(11/8) = 1.38 dB

The following tables report the six highest worst case levels recorded during the tests performed on the Cable Modem Gateway, SBG 1000 P5. All readings taken are peak readings unless otherwise noted. The data sheets from which these tables were compiled are contained in Appendix B.

Table 1: 15.247(c) Antenna Terminal Six Highest Radiated Emission Levels

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	dB	dB	dB	CORRECTED READING dBµV	SPEC LIMIT dBµV	MARGIN dB	NOTES
626.352	57.9	0.0				57.9	89.6	-31.7	V-6
651.390	56.7	0.0				56.7	88.7	-32.0	V-11
1607.968	58.9	0.0				58.9	89.8	-30.9	V-1
1624.634	58.5	0.0				58.5	89.6	-31.1	V-6
1641.304	59.8	0.0				59.8	88.7	-28.9	V-11
7386.036	56.5	0.0				56.5	88.7	-32.2	V-11

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.247(c)

NOTES: V = Vertical Polarization
1 = Channel 1
6 = Channel 6
11 = Channel 11

COMMENTS: The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The "F" connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The Dolch computer is running the TFTPD32 program. The EUT is transmitting on Channels 1, 6 and 11. Temperature: 25°C, Humidity: 46%, Pressure: 100kPa. Voltage to EUT is 120 Vac 60Hz. Data represents all emissions seen from 9 kHz to 25 GHz. Antenna terminal conducted emissions test (-20dBc limit).

Table 2: 15.247(c) OATS Six Highest Radiated Emission Levels: 9 kHz - 30 MHz

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	15.31 dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
0.076	72.6	10.5		0.2	-80.0	3.3	30.0	-26.7	N-6
0.077	72.3	10.5		0.2	-80.0	3.0	29.9	-26.9	N-11
0.079	72.4	10.5		0.2	-80.0	3.1	29.6	-26.5	N-1
0.137	64.8	10.1		0.2	-80.0	-4.9	24.8	-29.7	N-11
0.138	65.4	10.1		0.2	-80.0	-4.3	24.8	-29.1	N-1
0.138	64.5	10.1		0.2	-80.0	-5.2	24.8	-30.0	N-6

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.247(c)
Test Distance: 3 Meters

NOTES: N = No Polarization
1 = Channel 1
6 = Channel 6
11 = Channel 11

COMMENTS: Channel 1: The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The "F" connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The Dolch computer is running the TFTPD32 program. The EUT is transmitting on Channels 1,6 and 11. Temperature: 23°C, Humidity: 53%, Pressure: 100kPa. Voltage to EUT is 120 Vac 60Hz. Data sheet represents emissions from the frequency range of 0.009 to 30.0 MHz.

Table 3: 15.247(c) OATS Six Highest Radiated Emission Levels: 30-1000 MHz

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	Dist dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
37.534	47.5	15.4	-28.4	1.2		35.7	40.0	-4.3	HQ-1
48.047	52.2	11.5	-28.3	1.3		36.7	40.0	-3.3	VQ-1
48.076	52.9	11.5	-28.3	1.3		37.4	40.0	-2.6	VQ-6
48.101	53.1	11.5	-28.3	1.3		37.6	40.0	-2.4	VQ-11
82.531	55.6	7.4	-28.2	1.7		36.5	40.0	-3.5	HQ-1
640.062	44.4	20.5	-27.9	5.5		42.5	46.0	-3.5	HQ-6

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.247(c)
Test Distance: 3 Meters

NOTES:
H = Horizontal Polarization
V = Vertical Polarization
D = Dipole Reading
1 = Channel 1
6 = Channel 6
11 = Channel 11

COMMENTS: The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The "F" connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The Dolch computer is running the TFTPD32 program. The EUT is transmitting on Channels 1, 6 and 11. Temperature: 25°C, Humidity: 46%, Pressure: 100kPa. Voltage to EUT is 120 Vac 60Hz. Data sheet represents emissions from the frequency range of 30.0 to 1000.0 MHz.

Table 4: 15.247(c) OATS Six Highest Radiated Emission Levels: 1-25 GHz

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	Dist dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
1605.707	56.0	24.9	-38.6	5.2		47.5	54.0	-6.5	V-1
1844.400	56.3	25.9	-38.4	3.8		47.6	54.0	-6.4	V-6
1882.180	58.1	26.0	-38.3	3.8		49.6	54.0	-4.4	VA-11
7310.691	40.5	35.9	-37.8	13.0		51.6	54.0	-2.4	VA-6
7310.802	38.3	35.9	-37.8	13.0		49.4	54.0	-4.6	HA-6
7385.929	38.0	36.0	-37.9	13.0		49.1	54.0	-4.9	HA-11

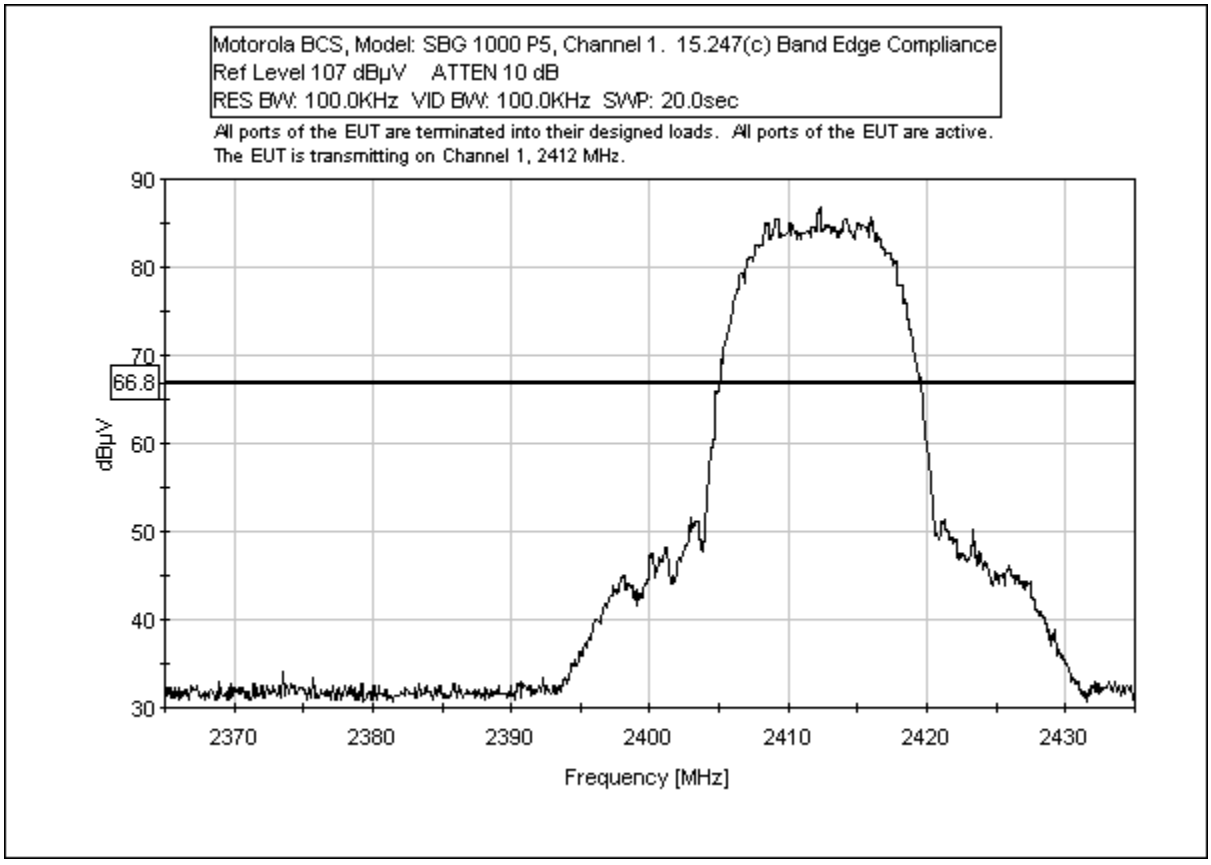
Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.247(c)
Test Distance: 3 Meters

NOTES:
H = Horizontal Polarization
V = Vertical Polarization
A = Average Reading
1 = Channel 1
6 = Channel 6
11 = Channel 11

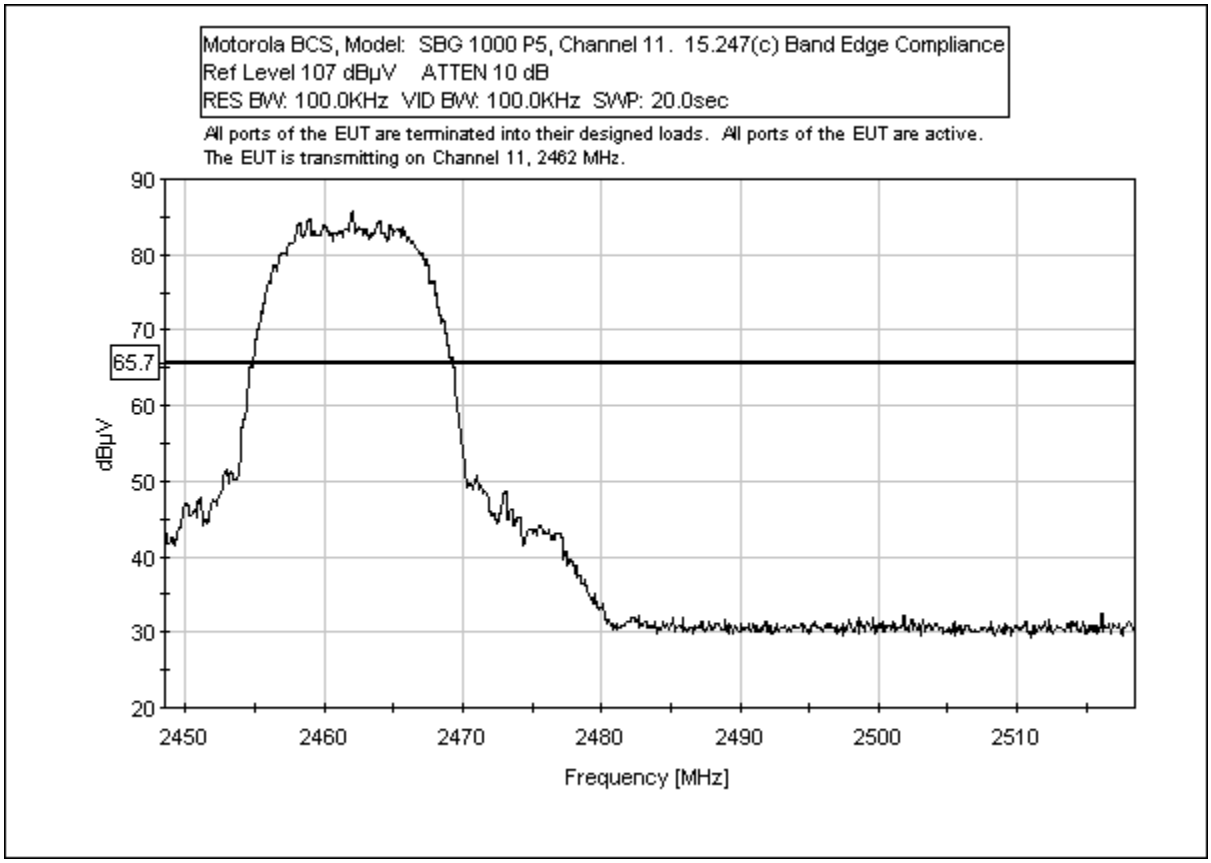
COMMENTS: The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The "F" connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The Dolch computer is running the TFTPD32 program. The EUT is transmitting on Channels 1, 6 and 11. Temperature: 25°C, Humidity: 46%, Pressure: 100kPa. Voltage to EUT is 120 Vac 60Hz. Data sheet represents emissions from the frequency range of 1.0 to 25.0 GHz.

15.247(c) BANDEDGE PLOTS – DIRECT SEQUENCE

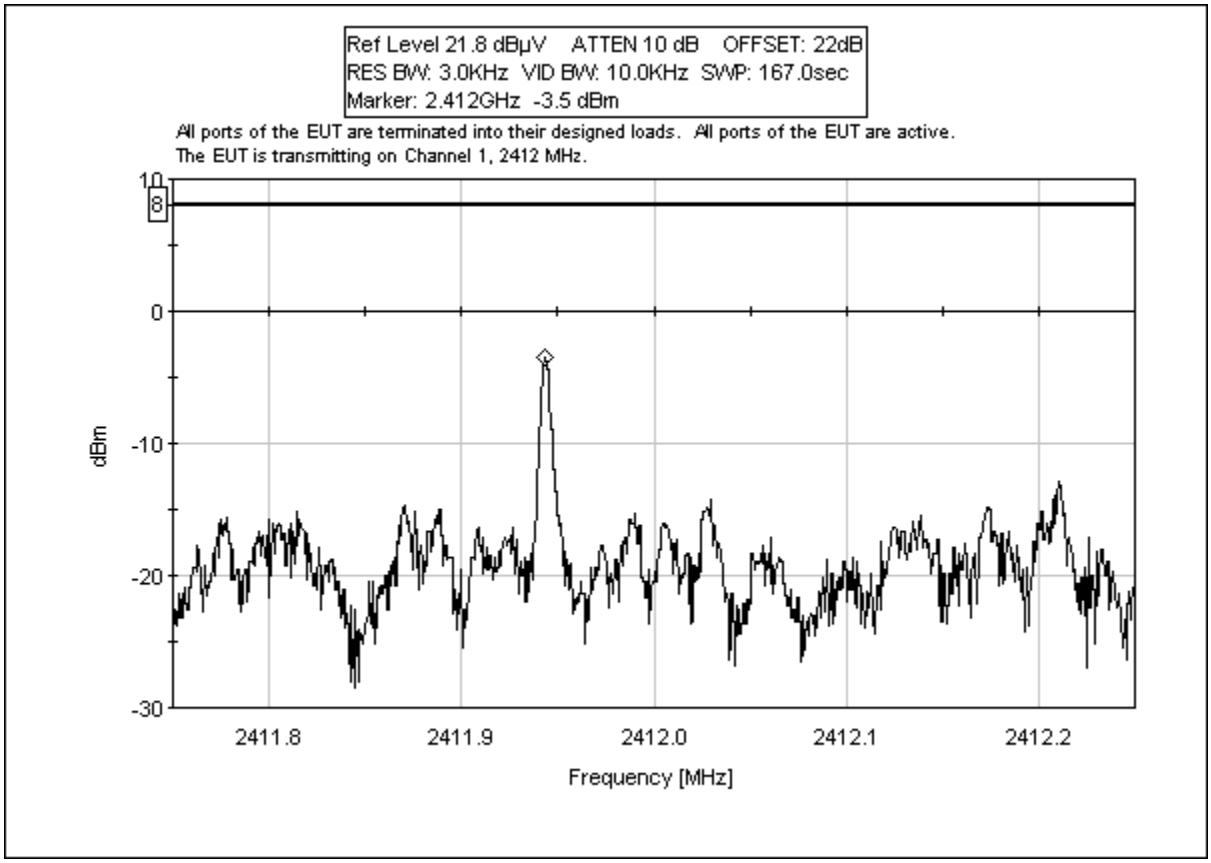
CHANNEL 1



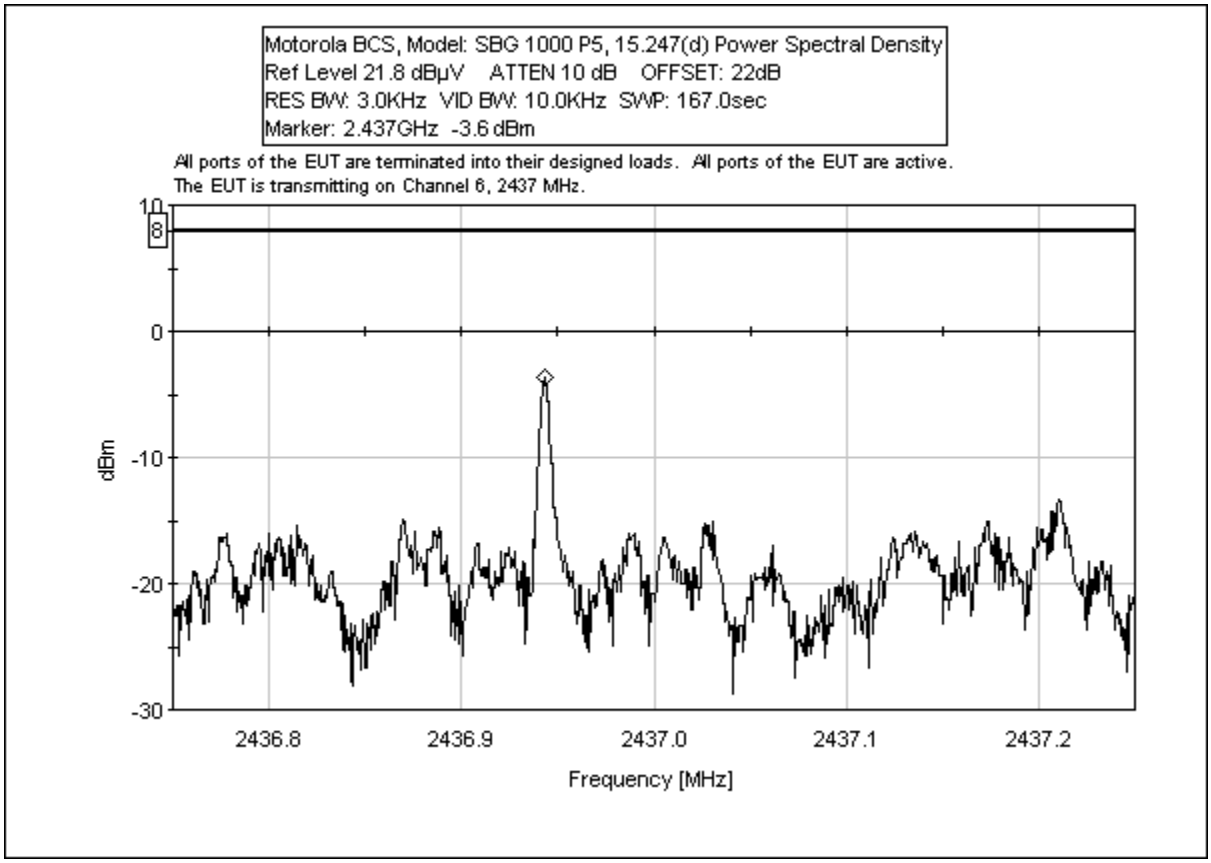
BANDEDGE PLOT - CHANNEL 11



15.247(d) POWER SPECTRAL DENSITY - CHANNEL 1



POWER SPECTRAL DENSITY - CHANNEL 6



POWER SPECTRAL DENSITY - CHANNEL 11

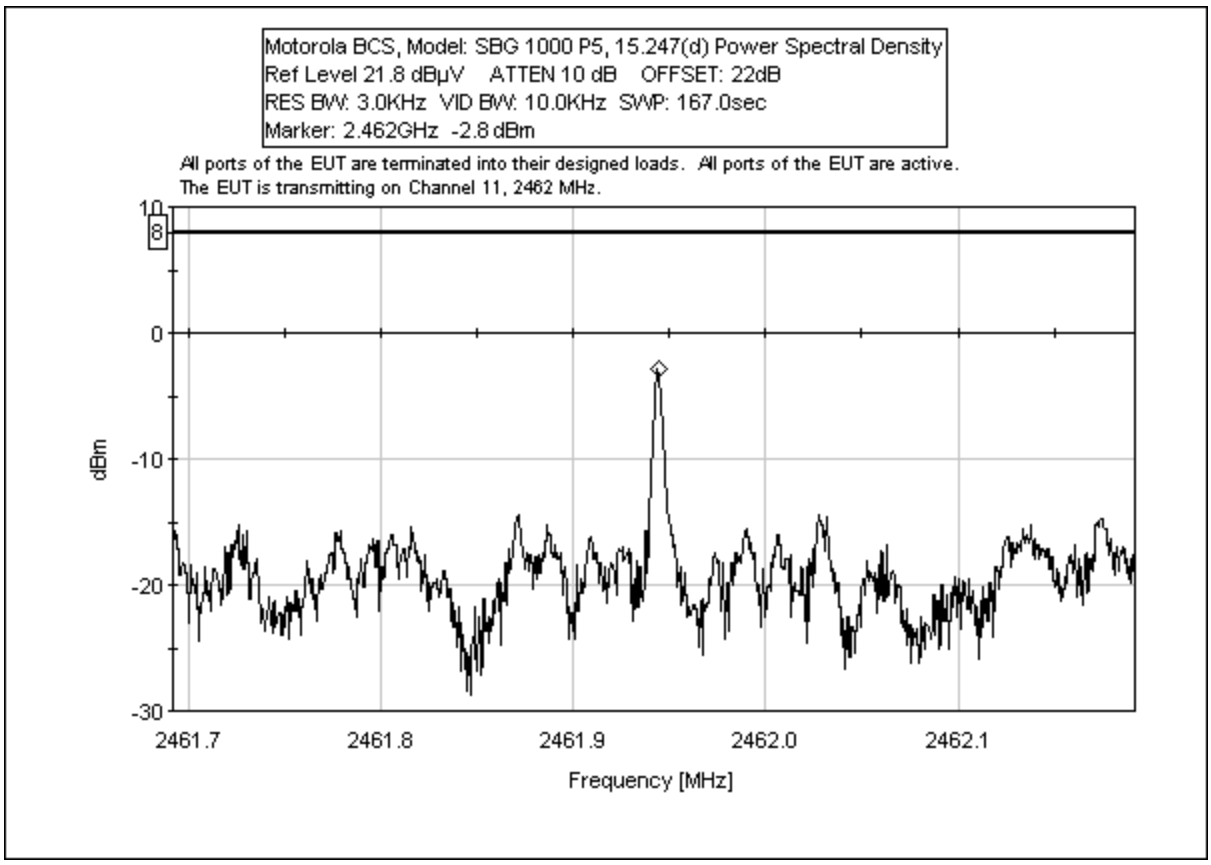


Table 5: 15.107/15.207 Six Highest Conducted Emission Levels									
FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Lisn dB	dB	dB	dB	CORRECTED READING dBµV	SPEC LIMIT dBµV	MARGIN dB	NOTES
1.206643	38.0	0.0				38.0	48.0	-10.0	B
3.314586	39.3	0.0				39.3	48.0	-8.7	B
3.314586	38.8	0.0				38.8	48.0	-9.2	W
4.044224	36.3	0.0				36.3	48.0	-11.7	B
25.209390	36.7	0.0				36.7	48.0	-11.3	W
25.218400	36.2	0.0				36.2	48.0	-11.8	B

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart B Section 15.107/Subpart C Section 15.207 Class B

NOTES: B = Black Lead
W = White Lead

COMMENTS: The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The "F" connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The Dolch computer is running the TFTPD32 program. The EUT is transmitting on Channel 1. Temperature: 25°C, Humidity: 50%, Pressure: 100kPa. Voltage to EUT is 120 Vac 60Hz.

Table 6: 15.109 Six Highest Radiated Emission Levels

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
46.844	49.1	12.0	-28.3	1.3		34.1	40.0	-5.9	VQ
48.065	52.1	11.5	-28.3	1.3		36.6	40.0	-3.4	VQ
82.547	53.5	7.4	-28.2	1.7		34.4	40.0	-5.6	HQ
330.057	44.1	20.2	-28.2	3.7		39.8	46.0	-6.2	H
390.013	48.4	16.1	-28.3	4.0		40.2	46.0	-5.8	HQ
640.054	44.2	20.5	-27.9	5.5		42.3	46.0	-3.7	HQ

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart B Section 15.109 Class B
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
V = Vertical Polarization
Q = Quasi Peak Reading

COMMENTS: The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The "F" connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The Dolch computer is running the TFTPD32 program. Temperature: 24°C, Humidity: 53%, Pressure: 100kPa. Voltage to EUT is 120 Vac 60Hz.

2.1093 MPE Calculations

Maximum Permissible Exposure Calculations

Date of Report: August 16th, 2002

Calculations prepared for:
Motorola BCS
6450 Sequence Drive
San Diego, Ca 92121

Calculations prepared by:
Stuart Yamamoto
110 N. Olinda Place
Brea, Ca 9283

Model Number: SBG 1000 P5
FCC Identification:

Fundamental Operating Frequency: 2412 MHz to 2462 MHz

Maximum Rated Output Power: 0.032 Watts (Antenna terminal)
Measured Maximum Output Power: 0.032 Watts (15.04dBm Antenna terminal, 2412 MHz)

MPE limit in accordance with FCC part 1.1311
15.04 dBm + 2.5 dBi = 17.54 dBm EIRP (56.75 mW)
Limit for Maximum permissible exposure: (B) Limit for General population/uncontrolled Exposure.

For the frequency range of 1500-100,000 MHz, the MPE is 1 mW/cm^2

EIRP (mW)	Distance (m)	Power density (mW/cm^2)	Result
56.75	0.20	0.01130	Pass

Calculation :
EIRP = Conducted power + antenna gain (dBi) = 15.04 dBm + 2.5 dBi = 17.54 dBm = 56.75 mW.

Power density (mW/cm^2) = $\frac{EIRP}{4 \pi d^2}$ Given EIRP in mW, d in cm.

Under normal operating conditions, the antenna is designed to maintain a separation distance of 20 cm from all persons. As can be seen from the MPE results, this device passes the limits specified in 1.1311 at a distance of 2.125 cm and at the rated output power of 56.75 mW.

Minimum distance calculation at maximum exposure of 1 nW/cm^2

$d^2 = \frac{EIRP}{4 \times 3.1416 \times 1}$

$d = 2.12$ cm

TEMPERATURE AND HUMIDITY DURING TESTING

The temperature during testing was within +15°C and + 35°C.
The relative humidity was between 20% and 75%.

MEASUREMENT UNCERTAINTY

Measurement uncertainty associated with data in this report is a ± 2.94dB for radiated and ± 1.56dB for conducted emissions.

EUT SETUP

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the photographs in Appendix A. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables. The corrected data was then compared to the applicable emission limits to determine compliance.

The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available I/O ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. I/O cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected. The interval between different pieces of equipment was approximately 10 centimeters. All excessive interconnecting cable was bundled in 30-40 centimeter lengths.

The radiated and conducted emissions data of the Cable Modem Gateway, SBG 1000 P5, was taken with the HP Spectrum Analyzer. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in Table A.

Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dBµV/m, the spectrum analyzer reading in dBµV was corrected by using the following formula in Table A. This reading was then compared to the applicable specification limit to determine compliance.

TABLE A: SAMPLE CALCULATIONS

	Meter reading	(dBµV)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dBµV/m)

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed in Table A were used to collect both the radiated and conducted emissions data for the Cable Modem Gateway, SBG 1000 P5. For radiated measurements from 9 kHz to 30 MHz, the magnetic loop antenna was used. For radiated measurements below 300 MHz, the biconical antenna was used. For frequencies from 300 to 1000 MHz, the log periodic antenna was used. The horn antenna was used for frequencies above 1000 MHz. All antennas were located at a distance of 3 meters from the edge of the EUT. Conducted emissions tests required the use of the FCC type LISNs.

The HP spectrum analyzer was used for all measurements. Table B shows the analyzer bandwidth settings that were used in designated frequency bands. For conducted emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used. A 10 dB external attenuator was also used during conducted tests, with internal offset correction in the analyzer. During radiated testing, the measurements were made with 0 dB of attenuation, a reference level of 97 dBµV, and a vertical scale of 10 dB per division.

SPECTRUM ANALYZER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the Tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the six highest readings, this is indicated as a "Q" or an "A" in the appropriate table. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

In this mode, the Spectrum Analyzer or test engineer recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the analyzer called "peak hold," the analyzer had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the analyzer made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the HP Quasi-Peak Adapter for the HP Spectrum Analyzer. The detailed procedure for making quasi peak measurements contained in the HP Quasi-Peak Adapter manual were followed.

Average

For certain frequencies, average measurements may be made using the spectrum analyzer. To make these measurements, the test engineer reduces the video bandwidth on the analyzer until the modulation of the signal is filtered out. At this point the analyzer is set into the linear mode and the scan time is reduced.

EUT TESTING

Mains Conducted Emissions

During conducted emissions testing, the EUT was located on a wooden table measuring approximately 80 cm high, 1 meter deep, and 1.5 meters in length. One wall of the room where the EUT was located has a minimum 2 meter by 2 meter conductive plane. The EUT was mounted on the wooden table 40 cm away from the conductive plane, and 80 cm from any other conductive surface.

The vertical metal plane used for conducted emissions was grounded to the earth. Power to the EUT was provided through a LISN. The LISN was grounded to the ground plane. All other objects were kept a minimum of 80 cm away from the EUT during the conducted test.

For conducted emissions testing, a 30 to 50 second sweep time was used for automated measurements in the frequency bands of 450 kHz to 1.705 MHz, 1.705 MHz to 3 MHz, and 3 MHz to 30 MHz. All readings within 20 dB of the limit were recorded. At frequencies where the recorded emissions were close to the limit, further investigation was performed manually at a slower sweep rate.

Antenna Conducted Emissions

For measuring the signal strength on the RF output port of the EUT, the spectrum analyzer was connected directly to the EUT. The sweep time of the analyzer was adjusted so that the spectrum analyzer readings were always in a calibrated range. All readings within 20 dB of the limit were recorded.

Radiated Emissions

The EUT was mounted on a nonconductive, rotating table 80 cm above the conductive grid. The nonconductive table dimensions were 1 meter by 1.5 meters.

During the preliminary radiated scan, the host PC was powered up and operating in its defined FCC test mode. For radiated measurements from 9 kHz to 30 MHz, the magnetic loop antenna was used. The frequency range of 30 MHz to 88 MHz was scanned with the biconical antenna located about 1.5 meter above the ground plane in the vertical configuration. During this scan, the turntable was rotated and all peaks at or near the limit were recorded. The frequency range of 100 to 300 MHz was then scanned in the same manner using the biconical antenna and the peaks recorded. Lastly, a scan of the FM band from 88 to 110 MHz was made, using a reduced resolution bandwidth and frequency span. The biconical antenna was changed to the horizontal polarity and the above steps were repeated. After changing to the log periodic antenna in the horizontal configuration, the frequency range of 300 to 1000 MHz was scanned. The log periodic antenna was changed to the vertical polarity and the frequency range of 300 to 1000 MHz was again scanned. For frequencies exceeding 1000 MHz, the horn antenna was used. Care was taken to ensure that no frequencies were missed within the FM and TV bands. An analysis was performed to determine if the signals that were at or near the limit were caused by an ambient transmission. If unable to determine by analysis, the equipment was powered down to make the final determination if the EUT was the source of the emission.

A thorough scan of all frequencies was made manually using a small frequency span, rotating the turntable as needed. The test engineer maximized the readings with respect to the table rotation and configuration of EUT. Maximizing of the EUT was achieved by monitoring the spectrum analyzer on a closed circuit television monitor.

TRANSMITTER CHARACTERISTICS

15.247(a)(2) Bandwidth Measurements (Direct Sequence)
The fundamental frequency was kept within the permitted band 2400-2483.5. The minimum 6dB bandwidth shall be at least 500 kHz. Refer to the occupied bandwidth plots.

15.247(b) Peak Output Power
Frequency Band of Transmitter: 2400-2483.5

The RF conducted test was measured using a direct connection between the antenna port of the transmitter and the spectrum analyzer, through suitable attenuation. The resolution bandwidth was adjusted to greater than the 6 dB bandwidth of the emissions.

- **15.247(b)(1)** The maximum peak output power for all direct sequences, shall not exceed 1 watt.

- **15.247(b)(3)** If the transmitting antenna of directional gain greater than 6 dBi was used, except as shown in sections 15.247(b)(3)(i), (ii) & (iii), the peak output power shall be reduced below the stated values in paragraphs (b)(1) of section 15.247, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

15.247(d) Peak Power Spectral Density
The peak power spectral density conducted from the EUT to the antenna was not greater than 8 dm in any 3 kHz band during any time interval of continuous transmission.

APPENDIX A

TEST SETUP PHOTOGRAPHS

PHOTOGRAPH SHOWING VOLTAGE VARIATIONS AND PEAK OUTPUT

Voltage Variations and Peak Output

PHOTOGRAPH SHOWING OCCUPIED BANDWIDTH

Occupied Bandwidth

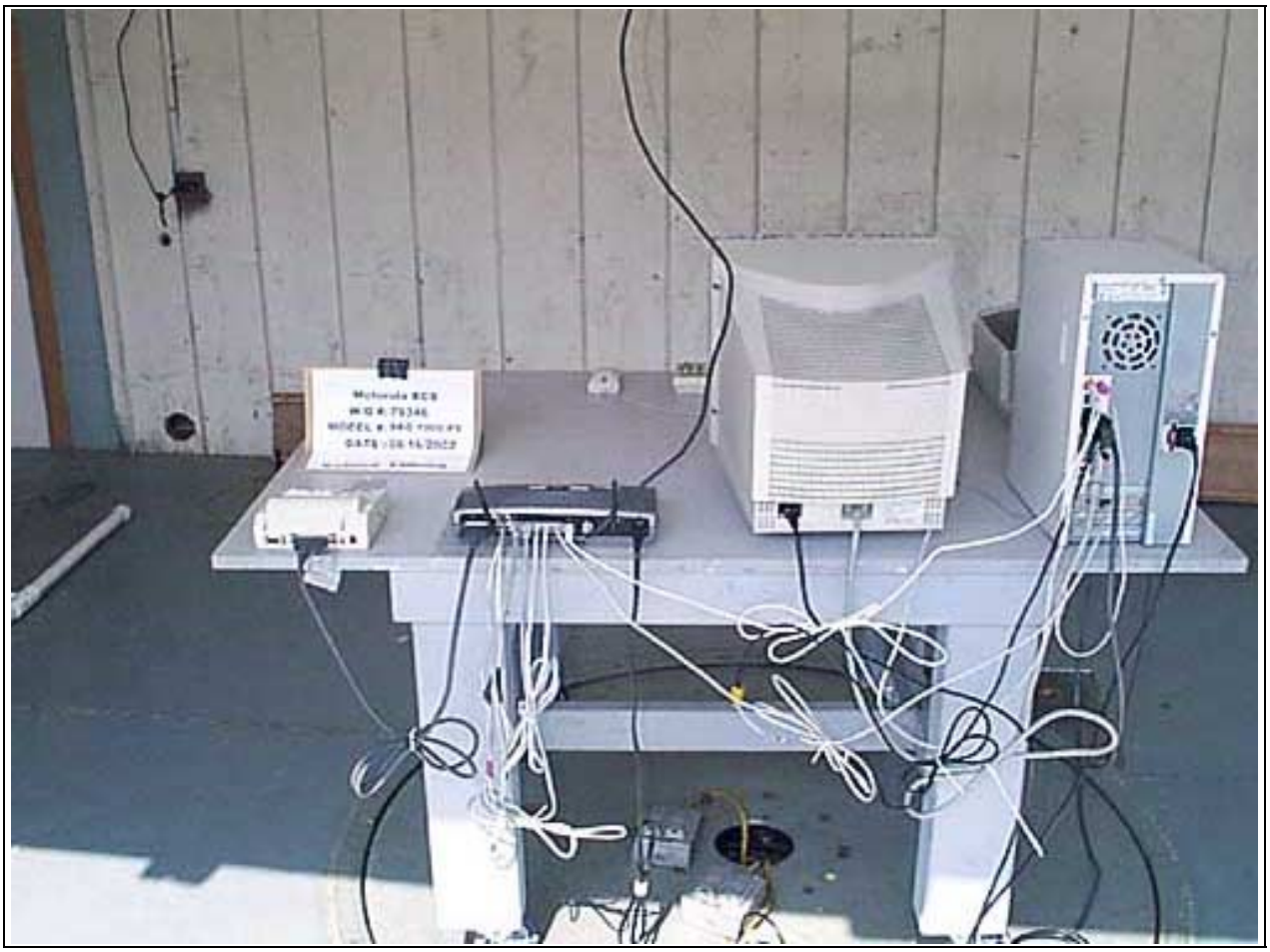
PHOTOGRAPH SHOWING DIRECT CONNECT TESTING

Direct Connect Testing

PHOTOGRAPH SHOWING OATS TESTING

Oats - Front View

PHOTOGRAPH SHOWING OATS TESTING



Oats - Back View

PHOTOGRAPH SHOWING POWER SPECTRAL DENSITY

Power Spectral Density

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS

Mains Conducted Emissions - Front View

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS

Mains Conducted Emissions - Back View

APPENDIX B

TEST EQUIPMENT LIST

15.31(e)

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Power Meter	02082	HP	435B	2445A11881	82101	82102
Power Sensor	02083	HP	8482A	2349A09782	52902	52903
SMA Cable	1337	Goretex	3825510-76	244922	82401	82402
Programmable Power Source	01695/ 01696	Pacific Power	345AMX / UPC32	250 / 245	62102	062103

15.247(a)(2)

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	01865	HP	8566B	2532A02509	92801	92802
QP Adapter	01437	HP	85650A	3303A01884	92801	92802
SMA Cable	1337	Goretex	3825510-76	244922	82401	82402
10dB Attenuator		Weinschel	93459		8602	8603
10dB Attenuator		Weinschel	93459		8602	8603

15.247(b)(1)

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Power Meter	02082	HP	435B	2445A11881	82101	82102
Power Sensor	02083	HP	8482A	2349A09782	52902	52903
SMA Cable	1337	Goretex	3825510-76	244922	82401	82402

15.247(c)

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	01865	HP	8566B	2532A02509	92801	92802
QP Adapter	01437	HP	85650A	3303A01884	92801	92802
Spectrum Analyzer	02467	Agilent	E7405A	US40240225	32902	32903
Bicon Antenna	306	AH	SAS200/540	220	92401	92402
Log Periodic Antenna	331	AH	SAS 00/516	330	92401	92402
Pre-amp	00309	HP	8447D	1937A02548	90501	90502
Antenna cable	NA	NA	RG214	Cable#15	122001	122002
Pre-amp to SA cable	NA	Harbour	RG223/U	Cable#10	70802	70803
1-18 GHz Horn Antenna	0849	EMCO	3115	6246	91201	91202
Microwave Pre-amp	00786	HP	83017A	3123A00281	91201	91202
¼" Heliax Coaxial Cable	NA	Andrew	FSJ-50A-4	Cable#7 (6 ft)	71502	71503
¼" Heliax Coaxial Cable	NA	Andrew	LDF1-50	Cable#18 (70 ft)	91101	91102
SMA Cable	2212	Beldon	9273	NA	101701	101702
SMA Cable	1337	Goretex	3825510-76	244922	82401	82402
Loop Antenna	00314	EMCO	6502	2014	72302	72303
3.5 GHz High Pass Filter	02117	HP	84300-80038	3643A00027	62502	62503
8.2 GHz High Pass Filter	02118	HP	84300-80039		62502	62503
18-26.5 GHz Horn Antenna	01413	HP	84125-80008	942126-003	71102	71103
10dB Attenuator		Weinschel	93459		8602	8603
10dB Attenuator		Weinschel	93459		8602	8603

15.247(d)

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	01865	HP	8566B	2532A02509	92801	92802
QP Adapter	01437	HP	85650A	3303A01884	92801	92802
SMA Cable	1337	Goretex	3825510-76	244922	82401	82402
10dB Attenuator		Weinschel	93459		8602	8603
10dB Attenuator		Weinschel	93459		8602	8603

15.107/15.207

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	01865	HP	8566B	2532A02509	092801	092802
QP Adapter	01437	HP	85650A	3303A01884	092801	092802
LISN	02128	EMCO	3816/2NM	9809-1090	032002	032003
LISN	00847	EMCO	3816/2NM	1104	101501	101502

15.109

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	01865	HP	8566B	2532A02509	092801	092802
QP Adapter	01437	HP	85650A	3303A01884	092801	092802
Spectrum Analyzer	02467	Agilent	E7405A	US40240225	032902	032903
Bicon Antenna	306	AH	SAS200/540	220	092401	092402
Log Periodic Antenna	331	AH	SAS 00/516	330	092401	092402
Pre-amp	00309	HP	8447D	1937A02548	090501	090502
Antenna cable	NA	NA	RG214	Cable#15	122001	122002
Pre-amp to SA cable	NA	Harbour	RG223/U	Cable#10	070802	070803
1-18 GHz Horn Antenna	0849	EMCO	3115	6246	091201	091202
Microwave Pre-amp	00786	HP	83017A	3123A00281	091201	091202
¼" Heliax Coaxial Cable	NA	Andrew	FSJ-50A-4	Cable#7 (6 ft)	071502	071503
¼" Heliax Coaxial Cable	NA	Andrew	LDF1-50	Cable#18 (70 ft)	091101	091102
SMA Cable	2212	Beldon	9273	NA	101701	101702
SMA Cable	1337	Goretex	3825510-76	244922	82401	82402
3.5 GHz High Pass Filter	02117	HP	84300-80038	3643A00027	62502	62503
8.2 GHz High Pass Filter	02118	HP	84300-80039		62502	62503
18-26.5 GHz Horn Antenna	01413	HP	84125-80008	942126-003	71102	71103
10dB Attenuator		Weinschel	93459		8602	8603
10dB Attenuator		Weinschel	93459		8602	8603

2.1093

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Power Meter	02082	HP	435B	2445A11881	82101	82102
Power Sensor	02083	HP	8482A	2349A09782	52902	52903
SMA Cable	1337	Goretex	3825510-76	244922	82401	82402

APPENDIX C

MEASUREMENT DATA SHEETS

Test Location: CKC Laboratories, Inc. •110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**
Specification: **FCC 15.247(c) Emissions (-20dBc limit)**
Work Order #: **79346** Date: 08/08/2002
Test Type: **Maximized emission** Time: 16:06:00
Equipment: **Cable Modem** Sequence#: 5
Manufacturer: Motorola BCS Tested By: Stuart Yamamoto
Model: SBG 1000 P5
S/N: 00080ED2F1E0

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cable Modem*	Motorola BCS	SBG 1000 P5	00080ED2F1E0

Support Devices:

Function	Manufacturer	Model #	S/N
C6U Converter	General Instruments	C6U	J5M7000101358
Hub	Bay Networks	DS104	DS14H08355155
Computer	Toshiba	PA1215UV	04694236
Computer	Dolch	L-PAC 585	DCS2016538
Thermal Printer	SII	DPU-414	1033083A
Mouse	Gateway	MOSXK	
Keyboard	Dell	SK-1000RS	M940111179
Monitor	NEC	JC-1538VMA	5900265EA
Computer	Gateway	G6-366C	0013168086
Parallel Printer	Epson	P156A	CMR1545596
Head End	Cisco	uBR-MC11C	CN1ISS0AA

Test Conditions / Notes:

The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The "F" connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The Dolch computer is running the TFTPD32 program. The EUT is transmitting on Channel 1. Temperature: 25°C, Humidity: 46%, Pressure: 100kPa Voltage to EUT is 120 Vac 60Hz. Data represents all emissions seen from 9 kHz to 25 GHz. Antenna terminal conducted emissions test (-20dBc limit).

Transducer Legend:

Measurement Data: Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	1607.968M	58.9					+0.0	58.9	89.8	-30.9	Vert
2	7236.300M	56.4					+0.0	56.4	89.8	-33.4	Vert
3	4826.520M	53.4					+0.0	53.4	89.8	-36.4	Vert

Test Location: CKC Laboratories, Inc. •110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**
Specification: **FCC 15.247(c) Emissions (-20dBc limit)**
Work Order #: **79346** Date: 08/16/2002
Test Type: **Maximized emission** Time: 13:57:22
Equipment: **Cable Modem** Sequence#: 13
Manufacturer: Motorola BCS Tested By: Stuart Yamamoto
Model: SBG 1000 P5
S/N: 00080ED2F1E0

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cable Modem*	Motorola BCS	SBG 1000 P5	00080ED2F1E0

Support Devices:

Function	Manufacturer	Model #	S/N
C6U Converter	General Instruments	C6U	J5M7000101358
Hub	Bay Networks	DS104	DS14H08355155
Computer	Toshiba	PA1215UV	04694236
Computer	Dolch	L-PAC 585	DCS2016538
Thermal Printer	SII	DPU-414	1033083A
Mouse	Gateway	MOSXK	
Keyboard	Dell	SK-1000RS	M940111179
Monitor	NEC	JC-1538VMA	5900265EA
Computer	Gateway	G6-366C	0013168086
Parallel Printer	Epson	P156A	CMR1545596
Head End	Cisco	uBR-MC11C	CN1ISS0AA

Test Conditions / Notes:

The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The "F" connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The Dolch computer is running the TFTPD32 program. The EUT is transmitting on Channel 6. Temperature: 25°C, Humidity: 50%, Pressure: 100kPa Voltage to EUT is 120 Vac 60Hz. Data represents all emissions seen from 9 kHz to 25 GHz. Antenna terminal conducted emissions test (-20dBc limit).

Transducer Legend:

Measurement Data: Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	1624.634M	58.5					+0.0	58.5	89.6	-31.1	Vert
2	626.352M	57.9					+0.0	57.9	89.6	-31.7	Vert
3	1845.774M	53.0					+0.0	53.0	89.6	-36.6	Vert
4	4873.642M	50.4					+0.0	50.4	89.6	-39.2	Vert

5	3249.248M	49.9	+0.0	49.9	89.6	-39.7	Vert
6	7311.499M	48.0	+0.0	48.0	89.6	-41.6	Vert
7	22.463M	47.3	+0.0	47.3	89.6	-42.3	Vert
8	10.986M	45.2	+0.0	45.2	89.6	-44.4	Vert

Test Location: CKC Laboratories, Inc. •110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**
Specification: **FCC 15.247(c) Emissions (-20dBc limit)**
Work Order #: **79346** Date: 08/16/2002
Test Type: **Maximized emission** Time: 11:01:16
Equipment: **Cable Modem** Sequence#: 12
Manufacturer: Motorola BCS Tested By: Stuart Yamamoto
Model: SBG 1000 P5
S/N: 00080ED2F1E0

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cable Modem*	Motorola BCS	SBG 1000 P5	00080ED2F1E0

Support Devices:

Function	Manufacturer	Model #	S/N
C6U Converter	General Instruments	C6U	J5M7000101358
Hub	Bay Networks	DS104	DS14H08355155
Computer	Toshiba	PA1215UV	04694236
Computer	Dolch	L-PAC 585	DCS2016538
Thermal Printer	SII	DPU-414	1033083A
Mouse	Gateway	MOSXK	
Keyboard	Dell	SK-1000RS	M940111179
Monitor	NEC	JC-1538VMA	5900265EA
Computer	Gateway	G6-366C	0013168086
Parallel Printer	Epson	P156A	CMR1545596
Head End	Cisco	uBR-MC11C	CN1ISS0AA

Test Conditions / Notes:

The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The "F" connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The Dolch computer is running the TFTPD32 program. The EUT is transmitting on Channel 11. Temperature: 25°C, Humidity: 46%, Pressure: 100kPa Voltage to EUT is 120 Vac 60Hz. Data represents all emissions seen from 9 kHz to 25 GHz. Antenna terminal conducted emissions test (-20dBc limit).

Transducer Legend:

Measurement Data: Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	1641.304M	59.8					+0.0	59.8	88.7	-28.9	Vert
2	651.390M	56.7					+0.0	56.7	88.7	-32.0	Vert
3	7386.036M	56.5					+0.0	56.5	88.7	-32.2	Vert
4	4924.058M	54.1					+0.0	54.1	88.7	-34.6	Vert

5	1881.280M	50.3	+0.0	50.3	88.7	-38.4	Vert
6	48.137M	46.6	+0.0	46.6	88.7	-42.1	Vert
7	3282.608M	46.3	+0.0	46.3	88.7	-42.4	Vert
8	11.020M	44.2	+0.0	44.2	88.7	-44.5	Vert

Test Location: CKC Laboratories, Inc. •110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**
Specification: **FCC 15.247(c)**
Work Order #: **79346** Date: 08/15/2002
Test Type: **Maximized emission** Time: 14:41:27
Equipment: **Cable Modem** Sequence#: 3
Manufacturer: Motorola BCS Tested By: Stuart Yamamoto
Model: SBG 1000 P5
S/N: 00080ED2F1E0

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cable Modem*	Motorola BCS	SBG 1000 P5	00080ED2F1E0

Support Devices:

Function	Manufacturer	Model #	S/N
C6U Converter	General Instruments	C6U	J5M7000101358
Hub	Bay Networks	DS104	DS14H08355155
Computer	Toshiba	PA1215UV	04694236
Computer	Dolch	L-PAC 585	DCS2016538
Thermal Printer	SII	DPU-414	1033083A
Mouse	Gateway	MOSXK	
Keyboard	Dell	SK-1000RS	M940111179
Monitor	NEC	JC-1538VMA	5900265EA
Computer	Gateway	G6-366C	0013168086
Parallel Printer	Epson	P156A	CMR1545596
Head End	Cisco	uBR-MC11C	CN1ISS0AA

Test Conditions / Notes:

The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The "F" connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The Dolch computer is running the TFTPD32 program. The EUT is transmitting on Channel 1. Temperature: 23°C, Humidity: 53%, Pressure: 100kPa. Voltage to EUT is 120 Vac 60Hz. Data sheet represents emissions from the frequency range of 0.009 to 30.0 MHz.

Transducer Legend:

T1=6502 Active Loop Antenna	T2=Cable #10 070803
T3=Cable #15 120602	T4=15.31 40dB/Dec Correction

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	79.476k	72.4	+10.5	+0.1	+0.1	-80.0	+0.0	3.1	29.6	-26.5	None
2	137.590k	65.4	+10.1	+0.1	+0.1	-80.0	+0.0	-4.3	24.8	-29.1	None

3	199.780k	59.4	+9.9	+0.1	+0.1	-80.0	+0.0	-10.5	21.6	-32.1	None
4	259.590k	54.1	+10.0	+0.1	+0.1	-80.0	+0.0	-15.7	19.3	-35.0	None
5	317.620k	51.7	+10.1	+0.1	+0.1	-80.0	+0.0	-18.0	17.6	-35.6	None
6	377.040k	46.0	+10.0	+0.1	+0.1	-80.0	+0.0	-23.8	16.1	-39.9	None

Test Location: CKC Laboratories, Inc. •110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**
Specification: **FCC 15.247(c)**
Work Order #: **79346** Date: 08/15/2002
Test Type: **Maximized emission** Time: 14:35:55
Equipment: **Cable Modem** Sequence#: 9
Manufacturer: Motorola BCS Tested By: Stuart Yamamoto
Model: SBG 1000 P5
S/N: 00080ED2F1E0

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cable Modem*	Motorola BCS	SBG 1000 P5	00080ED2F1E0

Support Devices:

Function	Manufacturer	Model #	S/N
C6U Converter	General Instruments	C6U	J5M7000101358
Hub	Bay Networks	DS104	DS14H08355155
Computer	Toshiba	PA1215UV	04694236
Computer	Dolch	L-PAC 585	DCS2016538
Thermal Printer	SII	DPU-414	1033083A
Mouse	Gateway	MOSXK	
Keyboard	Dell	SK-1000RS	M940111179
Monitor	NEC	JC-1538VMA	5900265EA
Computer	Gateway	G6-366C	0013168086
Parallel Printer	Epson	P156A	CMR1545596
Head End	Cisco	uBR-MC11C	CN1ISS0AA

Test Conditions / Notes:

The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The "F" connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The Dolch computer is running the TFTPD32 program. The EUT is transmitting on Channel 6. Temperature: 23°C, Humidity: 52%, Pressure: 100kPa. Voltage to EUT is 120 Vac 60Hz. Data sheet represents emissions from the frequency range of 0.009 to 30.0 MHz.

Transducer Legend:

T1=6502 Active Loop Antenna	T2=Cable #10 070803
T3=Cable #15 120602	T4=15.31 40dB/Dec Correction

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	76.223k	72.6	+10.5	+0.1	+0.1	-80.0	+0.0	3.3	30.0	-26.7	None
2	137.970k	64.5	+10.1	+0.1	+0.1	-80.0	+0.0	-5.2	24.8	-30.0	None
3	196.904k	59.3	+9.9	+0.1	+0.1	-80.0	+0.0	-10.6	21.7	-32.3	None

4	258.810k	54.8	+10.0	+0.1	+0.1	-80.0	+0.0	-15.0	19.3	-34.3	None
5	320.270k	51.9	+10.1	+0.1	+0.1	-80.0	+0.0	-17.8	17.5	-35.3	None
6	378.300k	46.0	+10.0	+0.1	+0.1	-80.0	+0.0	-23.8	16.0	-39.8	None

Test Location: CKC Laboratories, Inc. •110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**
Specification: **FCC 15.247(c)**
Work Order #: **79346** Date: 08/15/2002
Test Type: **Maximized emission** Time: 14:24:57
Equipment: **Cable Modem** Sequence#: 8
Manufacturer: Motorola BCS Tested By: Stuart Yamamoto
Model: SBG 1000 P5
S/N: 00080ED2F1E0

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cable Modem*	Motorola BCS	SBG 1000 P5	00080ED2F1E0

Support Devices:

Function	Manufacturer	Model #	S/N
C6U Converter	General Instruments	C6U	J5M7000101358
Hub	Bay Networks	DS104	DS14H08355155
Computer	Toshiba	PA1215UV	04694236
Computer	Dolch	L-PAC 585	DCS2016538
Thermal Printer	SII	DPU-414	1033083A
Mouse	Gateway	MOSXK	
Keyboard	Dell	SK-1000RS	M940111179
Monitor	NEC	JC-1538VMA	5900265EA
Computer	Gateway	G6-366C	0013168086
Parallel Printer	Epson	P156A	CMR1545596
Head End	Cisco	uBR-MC11C	CN1ISS0AA

Test Conditions / Notes:

The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The "F" connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The Dolch computer is running the TFTPD32 program. The EUT is transmitting on Channel 11. Temperature: 23°C, Humidity: 52%, Pressure: 100kPa. Voltage to EUT is 120 Vac 60Hz. Data sheet represents emissions from the frequency range of 0.009 to 30.0 MHz.

Transducer Legend:

T1=6502 Active Loop Antenna	T2=Cable #10 070803
T3=Cable #15 120602	T4=15.31 40dB/Dec Correction

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	76.820k	72.3	+10.5	+0.1	+0.1	-80.0	+0.0	3.0	29.9	-26.9	None
2	137.250k	64.8	+10.1	+0.1	+0.1	-80.0	+0.0	-4.9	24.8	-29.7	None
3	196.220k	58.8	+9.9	+0.1	+0.1	-80.0	+0.0	-11.1	21.7	-32.8	None

4	260.870k	54.3	+10.0	+0.1	+0.1	-80.0	+0.0	-15.5	19.3	-34.8	None
5	318.980k	50.9	+10.1	+0.1	+0.1	-80.0	+0.0	-18.8	17.5	-36.3	None
6	375.948k	45.7	+10.0	+0.1	+0.1	-80.0	+0.0	-24.1	16.1	-40.2	None

Test Location: CKC Laboratories, Inc. •110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**
Specification: **FCC 15.247(c)**
Work Order #: **79346** Date: 08/07/2002
Test Type: **Maximized emission** Time: 14:05:32
Equipment: **Cable Modem** Sequence#: 1
Manufacturer: Motorola BCS Tested By: Stuart Yamamoto
Model: SBG 1000 P5
S/N: 00080ED2F1E0

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cable Modem*	Motorola BCS	SBG 1000 P5	00080ED2F1E0

Support Devices:

Function	Manufacturer	Model #	S/N
C6U Converter	General Instruments	C6U	J5M7000101358
Hub	Bay Networks	DS104	DS14H08355155
Computer	Toshiba	PA1215UV	04694236
Computer	Dolch	L-PAC 585	DCS2016538
Thermal Printer	SII	DPU-414	1033083A
Mouse	Gateway	MOSXK	
Keyboard	Dell	SK-1000RS	M940111179
Monitor	NEC	JC-1538VMA	5900265EA
Computer	Gateway	G6-366C	0013168086
Parallel Printer	Epson	P156A	CMR1545596
Head End	Cisco	uBR-MC11C	CN1ISS0AA

Test Conditions / Notes:

The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The "F" connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The Dolch computer is running the TFTPD32 program. The EUT is transmitting on Channel 1. Temperature: 25°C, Humidity: 46%, Pressure: 100kPa. Voltage to EUT is 120 Vac 60Hz. Data sheet represents emissions from the frequency range of 30.0 to 1000.0 MHz.

Transducer Legend:

T1=Bicon 092401	T2=Log 331 092401
T3=Preamp 8447D 090501	T4=Cable #10 070803
T5=Cable #15 120602	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	48.047M	52.2	+11.5	+0.0	-28.3	+0.1	+0.0	36.7	40.0	-3.3	Vert
	QP		+1.2								
^	48.056M	52.7	+11.5	+0.0	-28.3	+0.1	+0.0	37.2	40.0	-2.8	Vert
			+1.2								

3	82.531M QP	55.6	+7.4 +1.6	+0.0	-28.2	+0.1	+0.0	36.5	40.0	-3.5	Horiz
^	82.538M	57.9	+7.4 +1.6	+0.0	-28.2	+0.1	+0.0	38.8	40.0	-1.2	Horiz
5	37.534M QP	47.5	+15.4 +1.1	+0.0	-28.4	+0.1	+0.0	35.7	40.0	-4.3	Horiz
^	37.514M	48.3	+15.4 +1.1	+0.0	-28.4	+0.1	+0.0	36.5	40.0	-3.5	Horiz
7	640.046M QP	43.2	+0.0 +5.1	+20.5	-27.9	+0.4	+0.0	41.3	46.0	-4.7	Horiz
^	640.056M	44.1	+0.0 +5.1	+20.5	-27.9	+0.4	+0.0	42.2	46.0	-3.8	Horiz
9	37.013M QP	46.9	+15.4 +1.1	+0.0	-28.4	+0.1	+0.0	35.1	40.0	-4.9	Vert
^	37.094M	48.6	+15.5 +1.1	+0.0	-28.4	+0.1	+0.0	36.9	40.0	-3.1	Vert
11	200.559M QP	46.8	+16.8 +2.6	+0.0	-28.4	+0.2	+0.0	38.0	43.5	-5.5	Vert
^	200.551M	47.8	+16.8 +2.6	+0.0	-28.4	+0.2	+0.0	39.0	43.5	-4.5	Vert
13	768.063M	39.7	+0.0 +5.6	+21.9	-27.8	+0.4	+0.0	39.8	46.0	-6.2	Vert
14	320.031M	43.4	+0.0 +3.4	+20.9	-28.3	+0.3	+0.0	39.7	46.0	-6.3	Horiz
15	640.071M QP	41.6	+0.0 +5.1	+20.5	-27.9	+0.4	+0.0	39.7	46.0	-6.3	Vert
^	640.067M	43.4	+0.0 +5.1	+20.5	-27.9	+0.4	+0.0	41.5	46.0	-4.5	Vert
17	390.034M QP	47.8	+0.0 +3.7	+16.1	-28.3	+0.3	+0.0	39.6	46.0	-6.4	Vert
^	390.028M	48.3	+0.0 +3.7	+16.1	-28.3	+0.3	+0.0	40.1	46.0	-5.9	Vert
19	390.039M	47.6	+0.0 +3.7	+16.1	-28.3	+0.3	+0.0	39.4	46.0	-6.6	Horiz
20	112.550M	49.0	+14.0 +1.9	+0.0	-28.4	+0.2	+0.0	36.7	43.5	-6.8	Vert
21	256.028M	45.7	+18.4 +2.9	+0.0	-28.2	+0.3	+0.0	39.1	46.0	-6.9	Horiz
22	46.743M QP	48.1	+12.0 +1.2	+0.0	-28.3	+0.1	+0.0	33.1	40.0	-6.9	Vert
^	46.758M	51.9	+12.0 +1.2	+0.0	-28.3	+0.1	+0.0	36.9	40.0	-3.1	Vert
24	77.805M	52.8	+6.8 +1.6	+0.0	-28.3	+0.1	+0.0	33.0	40.0	-7.0	Horiz
25	76.296M	52.7	+6.8 +1.6	+0.0	-28.3	+0.1	+0.0	32.9	40.0	-7.1	Horiz
26	768.070M QP	38.8	+0.0 +5.6	+21.9	-27.8	+0.4	+0.0	38.9	46.0	-7.1	Horiz
^	768.084M	40.2	+0.0 +5.6	+21.9	-27.8	+0.4	+0.0	40.3	46.0	-5.7	Horiz

28	350.043M QP	44.5	+0.0 +3.5	+18.7	-28.2	+0.3	+0.0	38.8	46.0	-7.2	Horiz
^	350.045M	46.7	+0.0 +3.5	+18.7	-28.2	+0.3	+0.0	41.0	46.0	-5.0	Horiz
30	300.047M	40.9	+0.0 +3.3	+22.5	-28.3	+0.3	+0.0	38.7	46.0	-7.3	Horiz
31	350.070M	44.3	+0.0 +3.5	+18.7	-28.2	+0.3	+0.0	38.6	46.0	-7.4	Vert
32	96.102M	51.9	+10.6 +1.7	+0.0	-28.3	+0.1	+0.0	36.0	43.5	-7.5	Vert
33	800.063M QP	38.4	+0.0 +5.7	+21.5	-27.6	+0.5	+0.0	38.5	46.0	-7.5	Horiz
^	800.063M	40.1	+0.0 +5.7	+21.5	-27.6	+0.5	+0.0	40.2	46.0	-5.8	Horiz
35	464.154M	46.1	+0.0 +4.1	+16.4	-28.6	+0.4	+0.0	38.4	46.0	-7.6	Horiz
36	200.531M	44.7	+16.8 +2.6	+0.0	-28.4	+0.2	+0.0	35.9	43.5	-7.6	Horiz
37	70.805M	52.1	+6.9 +1.5	+0.0	-28.6	+0.1	+0.0	32.0	40.0	-8.0	Vert
38	400.067M QP	46.7	+0.0 +3.8	+15.5	-28.3	+0.3	+0.0	38.0	46.0	-8.0	Horiz
^	400.062M	49.7	+0.0 +3.8	+15.5	-28.3	+0.3	+0.0	41.0	46.0	-5.0	Horiz
40	320.042M	41.7	+0.0 +3.4	+20.9	-28.3	+0.3	+0.0	38.0	46.0	-8.0	Vert
41	331.858M	42.4	+0.0 +3.4	+20.0	-28.2	+0.3	+0.0	37.9	46.0	-8.1	Horiz
42	550.075M	43.4	+0.0 +4.6	+17.9	-28.6	+0.4	+0.0	37.7	46.0	-8.3	Vert
43	329.370M	42.0	+0.0 +3.4	+20.2	-28.2	+0.3	+0.0	37.7	46.0	-8.3	Horiz
44	512.035M	44.1	+0.0 +4.4	+17.2	-28.5	+0.4	+0.0	37.6	46.0	-8.4	Vert
45	100.032M	49.9	+11.5 +1.8	+0.0	-28.4	+0.1	+0.0	34.9	43.5	-8.6	Horiz
46	800.068M	37.2	+0.0 +5.7	+21.5	-27.6	+0.5	+0.0	37.3	46.0	-8.7	Vert
47	665.313M	38.2	+0.0 +5.1	+21.4	-27.9	+0.4	+0.0	37.2	46.0	-8.8	Vert
48	449.200M	45.3	+0.0 +4.0	+16.2	-28.7	+0.4	+0.0	37.2	46.0	-8.8	Vert
49	760.288M	37.1	+0.0 +5.5	+22.0	-27.8	+0.4	+0.0	37.2	46.0	-8.8	Horiz
50	61.281M QP	50.4	+7.9 +1.3	+0.0	-28.6	+0.1	+0.0	31.1	40.0	-8.9	Vert
^	61.268M	54.6	+7.9 +1.3	+0.0	-28.6	+0.1	+0.0	35.3	40.0	-4.7	Vert

52	600.031M QP	41.0	+0.0 +4.9	+18.9	-28.1	+0.4	+0.0	37.1	46.0	-8.9	Horiz
^	600.054M	44.4	+0.0 +4.9	+18.9	-28.1	+0.4	+0.0	40.5	46.0	-5.5	Horiz
54	600.039M	40.8	+0.0 +4.9	+18.9	-28.1	+0.4	+0.0	36.9	46.0	-9.1	Vert
55	61.600M	50.2	+7.9 +1.3	+0.0	-28.6	+0.1	+0.0	30.9	40.0	-9.1	Horiz
56	500.055M	43.6	+0.0 +4.4	+16.9	-28.5	+0.4	+0.0	36.8	46.0	-9.2	Horiz
57	80.907M	50.2	+7.0 +1.6	+0.0	-28.2	+0.1	+0.0	30.7	40.0	-9.3	Vert
58	449.174M	44.7	+0.0 +4.0	+16.2	-28.7	+0.4	+0.0	36.6	46.0	-9.4	Horiz
59	200.074M	42.9	+16.8 +2.6	+0.0	-28.4	+0.2	+0.0	34.1	43.5	-9.4	Horiz
60	358.015M	42.5	+0.0 +3.6	+18.2	-28.2	+0.3	+0.0	36.4	46.0	-9.6	Horiz
61	358.022M	42.5	+0.0 +3.6	+18.2	-28.2	+0.3	+0.0	36.4	46.0	-9.6	Horiz
62	315.068M	39.4	+0.0 +3.4	+21.3	-28.3	+0.3	+0.0	36.1	46.0	-9.9	Vert
63	105.026M	47.6	+12.5 +1.8	+0.0	-28.4	+0.1	+0.0	33.6	43.5	-9.9	Vert
64	200.077M	42.3	+16.8 +2.6	+0.0	-28.4	+0.2	+0.0	33.5	43.5	-10.0	Vert
65	331.858M	40.1	+0.0 +3.4	+20.0	-28.2	+0.3	+0.0	35.6	46.0	-10.4	Vert
66	400.046M	44.3	+0.0 +3.8	+15.5	-28.3	+0.3	+0.0	35.6	46.0	-10.4	Vert
67	402.842M	44.2	+0.0 +3.8	+15.5	-28.3	+0.3	+0.0	35.5	46.0	-10.5	Vert
68	512.076M	41.9	+0.0 +4.5	+17.2	-28.5	+0.4	+0.0	35.5	46.0	-10.5	Horiz
69	450.070M	43.6	+0.0 +4.0	+16.2	-28.7	+0.4	+0.0	35.5	46.0	-10.5	Horiz
70	272.114M	40.3	+19.8 +3.1	+0.0	-28.3	+0.3	+0.0	35.2	46.0	-10.8	Horiz
71	99.998M	47.7	+11.5 +1.8	+0.0	-28.4	+0.1	+0.0	32.7	43.5	-10.8	Vert
72	105.027M	46.3	+12.5 +1.8	+0.0	-28.4	+0.1	+0.0	32.3	43.5	-11.2	Horiz
73	500.039M	41.5	+0.0 +4.4	+16.9	-28.5	+0.4	+0.0	34.7	46.0	-11.3	Vert
74	597.750M	38.5	+0.0 +4.9	+18.9	-28.1	+0.4	+0.0	34.6	46.0	-11.4	Horiz
75	665.279M	35.5	+0.0 +5.1	+21.4	-27.9	+0.4	+0.0	34.5	46.0	-11.5	Horiz
76	463.967M	42.1	+0.0 +4.1	+16.4	-28.6	+0.4	+0.0	34.4	46.0	-11.6	Vert

77	329.392M	38.6	+0.0 +3.4	+20.2	-28.2	+0.3	+0.0	34.3	46.0	-11.7	Vert
78	528.670M	40.3	+0.0 +4.5	+17.5	-28.6	+0.4	+0.0	34.1	46.0	-11.9	Horiz
79	384.059M	41.8	+0.0 +3.7	+16.5	-28.3	+0.3	+0.0	34.0	46.0	-12.0	Vert
80	384.055M	41.6	+0.0 +3.7	+16.5	-28.3	+0.3	+0.0	33.8	46.0	-12.2	Horiz
81	357.973M	36.6	+0.0 +3.6	+18.2	-28.2	+0.3	+0.0	30.5	46.0	-15.5	Vert

Test Location: CKC Laboratories, Inc. •110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**
Specification: **FCC 15.247(c)**
Work Order #: **79346** Date: 08/15/2002
Test Type: **Maximized emission** Time: 11:26:28
Equipment: **Cable Modem** Sequence#: 6
Manufacturer: Motorola BCS Tested By: Stuart Yamamoto
Model: SBG 1000 P5
S/N: 00080ED2F1E0

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cable Modem*	Motorola BCS	SBG 1000 P5	00080ED2F1E0

Support Devices:

Function	Manufacturer	Model #	S/N
C6U Converter	General Instruments	C6U	J5M7000101358
Hub	Bay Networks	DS104	DS14H08355155
Computer	Toshiba	PA1215UV	04694236
Computer	Dolch	L-PAC 585	DCS2016538
Thermal Printer	SII	DPU-414	1033083A
Mouse	Gateway	MOSXK	
Keyboard	Dell	SK-1000RS	M940111179
Monitor	NEC	JC-1538VMA	5900265EA
Computer	Gateway	G6-366C	0013168086
Parallel Printer	Epson	P156A	CMR1545596
Head End	Cisco	uBR-MC11C	CN1ISS0AA

Test Conditions / Notes:

The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The "F" connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The Dolch computer is running the TFTPD32 program. The EUT is transmitting on Channel 6. Temperature: 23°C, Humidity: 54%, Pressure: 100kPa. Voltage to EUT is 120 Vac 60Hz. Data sheet represents emissions from the frequency range of 30.0 to 1000.0 MHz.

Transducer Legend:

T1=Bicon 092401	T2=Log 331 092401
T3=Preamp 8447D 090501	T4=Cable #10 070803
T5=Cable #15 120602	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	48.076M	52.9	+11.5	+0.0	-28.3	+0.1	+0.0	37.4	40.0	-2.6	Vert
	QP		+1.2								
^	48.084M	54.1	+11.5	+0.0	-28.3	+0.1	+0.0	38.6	40.0	-1.4	Vert
			+1.2								

3	640.062M QP	44.4	+0.0 +5.1	+20.5	-27.9	+0.4	+0.0	42.5	46.0	-3.5	Horiz
^	640.078M	44.5	+0.0 +5.1	+20.5	-27.9	+0.4	+0.0	42.6	46.0	-3.4	Horiz
5	96.000M QP	54.5	+10.6 +1.7	+0.0	-28.3	+0.1	+0.0	38.6	43.5	-4.9	Vert
^	95.999M	54.7	+10.6 +1.7	+0.0	-28.3	+0.1	+0.0	38.8	43.5	-4.7	Vert
7	37.011M QP	46.6	+15.5 +1.1	+0.0	-28.4	+0.1	+0.0	34.9	40.0	-5.1	Vert
^	37.017M	46.7	+15.5 +1.1	+0.0	-28.4	+0.1	+0.0	35.0	40.0	-5.0	Vert
9	80.088M QP	54.6	+6.8 +1.6	+0.0	-28.2	+0.1	+0.0	34.9	40.0	-5.1	Vert
^	80.080M	56.6	+6.8 +1.6	+0.0	-28.2	+0.1	+0.0	36.9	40.0	-3.1	Vert
11	37.442M QP	45.8	+15.4 +1.1	+0.0	-28.4	+0.1	+0.0	34.0	40.0	-6.0	Horiz
^	37.447M	49.7	+15.4 +1.1	+0.0	-28.4	+0.1	+0.0	37.9	40.0	-2.1	Horiz
13	768.096M	39.8	+0.0 +5.6	+21.9	-27.8	+0.4	+0.0	39.9	46.0	-6.1	Horiz
14	300.077M	42.0	+0.0 +3.3	+22.5	-28.3	+0.3	+0.0	39.8	46.0	-6.2	Horiz
15	640.111M	41.6	+0.0 +5.1	+20.5	-27.9	+0.4	+0.0	39.7	46.0	-6.3	Vert
16	350.097M	45.4	+0.0 +3.5	+18.7	-28.2	+0.3	+0.0	39.7	46.0	-6.3	Vert
17	112.580M	49.5	+14.0 +1.9	+0.0	-28.4	+0.2	+0.0	37.2	43.5	-6.3	Vert
18	256.070M	46.1	+18.4 +3.0	+0.0	-28.2	+0.3	+0.0	39.6	46.0	-6.4	Horiz
19	600.059M QP	43.4	+0.0 +4.9	+18.9	-28.1	+0.4	+0.0	39.5	46.0	-6.5	Horiz
^	600.078M	46.3	+0.0 +4.9	+18.9	-28.1	+0.4	+0.0	42.4	46.0	-3.6	Horiz
21	400.078M QP	48.2	+0.0 +3.8	+15.5	-28.3	+0.3	+0.0	39.5	46.0	-6.5	Horiz
^	400.082M	50.3	+0.0 +3.8	+15.5	-28.3	+0.3	+0.0	41.6	46.0	-4.4	Horiz
23	331.876M	43.9	+0.0 +3.4	+20.0	-28.2	+0.3	+0.0	39.4	46.0	-6.6	Horiz
24	46.804M QP	48.3	+12.0 +1.2	+0.0	-28.3	+0.1	+0.0	33.3	40.0	-6.7	Vert
^	46.804M	52.1	+12.0 +1.2	+0.0	-28.3	+0.1	+0.0	37.1	40.0	-2.9	Vert
26	665.346M	40.1	+0.0 +5.1	+21.4	-27.9	+0.4	+0.0	39.1	46.0	-6.9	Horiz

27	62.690M QP	52.4	+7.8 +1.4	+0.0	-28.6	+0.1	+0.0	33.1	40.0	-6.9	Vert
^	62.690M	56.5	+7.8 +1.4	+0.0	-28.6	+0.1	+0.0	37.2	40.0	-2.8	Vert
29	760.341M	38.8	+0.0 +5.5	+22.0	-27.8	+0.4	+0.0	38.9	46.0	-7.1	Horiz
30	320.071M QP	42.6	+0.0 +3.4	+20.9	-28.3	+0.3	+0.0	38.9	46.0	-7.1	Horiz
^	320.079M	44.2	+0.0 +3.4	+20.9	-28.3	+0.3	+0.0	40.5	46.0	-5.5	Horiz
32	768.084M	38.7	+0.0 +5.6	+21.9	-27.8	+0.4	+0.0	38.8	46.0	-7.2	Vert
33	350.069M QP	44.5	+0.0 +3.5	+18.7	-28.2	+0.3	+0.0	38.8	46.0	-7.2	Horiz
^	350.065M	46.9	+0.0 +3.5	+18.7	-28.2	+0.3	+0.0	41.2	46.0	-4.8	Horiz
35	331.906M	43.2	+0.0 +3.4	+20.0	-28.2	+0.3	+0.0	38.7	46.0	-7.3	Vert
36	329.355M	43.0	+0.0 +3.4	+20.2	-28.2	+0.3	+0.0	38.7	46.0	-7.3	Horiz
37	80.952M QP	52.1	+7.0 +1.6	+0.0	-28.2	+0.1	+0.0	32.6	40.0	-7.4	Vert
^	80.937M	56.3	+7.0 +1.6	+0.0	-28.2	+0.1	+0.0	36.8	40.0	-3.2	Vert
39	320.089M	41.7	+0.0 +3.4	+20.9	-28.3	+0.3	+0.0	38.0	46.0	-8.0	Vert
40	665.303M	38.9	+0.0 +5.1	+21.4	-27.9	+0.4	+0.0	37.9	46.0	-8.1	Vert
41	400.063M	46.6	+0.0 +3.8	+15.5	-28.3	+0.3	+0.0	37.9	46.0	-8.1	Vert
42	77.841M	51.7	+6.8 +1.6	+0.0	-28.3	+0.1	+0.0	31.9	40.0	-8.1	Horiz
43	512.062M	44.2	+0.0 +4.5	+17.2	-28.5	+0.4	+0.0	37.8	46.0	-8.2	Vert
44	800.066M QP	37.6	+0.0 +5.7	+21.5	-27.6	+0.5	+0.0	37.7	46.0	-8.3	Horiz
^	800.095M	40.1	+0.0 +5.7	+21.5	-27.6	+0.5	+0.0	40.2	46.0	-5.8	Horiz
46	61.602M	51.0	+7.9 +1.3	+0.0	-28.6	+0.1	+0.0	31.7	40.0	-8.3	Horiz
47	76.296M	51.5	+6.8 +1.6	+0.0	-28.3	+0.1	+0.0	31.7	40.0	-8.3	Horiz
48	200.086M	43.8	+16.8 +2.6	+0.0	-28.4	+0.2	+0.0	35.0	43.5	-8.5	Vert
49	800.056M	37.2	+0.0 +5.7	+21.5	-27.6	+0.5	+0.0	37.3	46.0	-8.7	Vert
50	200.085M	43.6	+16.8 +2.6	+0.0	-28.4	+0.2	+0.0	34.8	43.5	-8.7	Horiz
51	100.097M	49.5	+11.5 +1.8	+0.0	-28.4	+0.1	+0.0	34.5	43.5	-9.0	Horiz

52	100.098M	49.2	+11.5 +1.8	+0.0	-28.4	+0.1	+0.0	34.2	43.5	-9.3	Vert
53	68.569M QP	50.2	+7.1 +1.5	+0.0	-28.6	+0.1	+0.0	30.3	40.0	-9.7	Vert
^	68.569M	54.8	+7.1 +1.5	+0.0	-28.6	+0.1	+0.0	34.9	40.0	-5.1	Vert
55	464.831M	43.6	+0.0 +4.1	+16.4	-28.6	+0.4	+0.0	35.9	46.0	-10.1	Horiz
56	200.516M	41.7	+16.8 +2.6	+0.0	-28.4	+0.2	+0.0	32.9	43.5	-10.6	Horiz

Test Location: CKC Laboratories, Inc. •110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**
Specification: **FCC 15.247(c)**
Work Order #: **79346** Date: 08/15/2002
Test Type: **Maximized emission** Time: 14:03:58
Equipment: **Cable Modem** Sequence#: 7
Manufacturer: Motorola BCS Tested By: Stuart Yamamoto
Model: SBG 1000 P5
S/N: 00080ED2F1E0

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cable Modem*	Motorola BCS	SBG 1000 P5	00080ED2F1E0

Support Devices:

Function	Manufacturer	Model #	S/N
C6U Converter	General Instruments	C6U	J5M7000101358
Hub	Bay Networks	DS104	DS14H08355155
Computer	Toshiba	PA1215UV	04694236
Computer	Dolch	L-PAC 585	DCS2016538
Thermal Printer	SII	DPU-414	1033083A
Mouse	Gateway	MOSXK	
Keyboard	Dell	SK-1000RS	M940111179
Monitor	NEC	JC-1538VMA	5900265EA
Computer	Gateway	G6-366C	0013168086
Parallel Printer	Epson	P156A	CMR1545596
Head End	Cisco	uBR-MC11C	CN1ISS0AA

Test Conditions / Notes:

The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The "F" connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The Dolch computer is running the TFTPD32 program. The EUT is transmitting on Channel 11. Temperature: 25°C, Humidity: 46%, Pressure: 100kPa. Voltage to EUT is 120 Vac 60Hz. Data sheet represents emissions from the frequency range of 30.0 to 1000.0 MHz.

Transducer Legend:

T1=Bicon 092401	T2=Log 331 092401
T3=Preamp 8447D 090501	T4=Cable #10 070803
T5=Cable #15 120602	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	48.101M	53.1	+11.5	+0.0	-28.3	+0.1	+0.0	37.6	40.0	-2.4	Vert
	QP		+1.2								
^	48.101M	54.6	+11.5	+0.0	-28.3	+0.1	+0.0	39.1	40.0	-0.9	Vert
			+1.2								

3	640.055M QP	43.3	+0.0 +5.1	+20.5	-27.9	+0.4	+0.0	41.4	46.0	-4.6	Horiz
^	640.063M	44.3	+0.0 +5.1	+20.5	-27.9	+0.4	+0.0	42.4	46.0	-3.6	Horiz
5	61.308M QP	54.3	+7.9 +1.3	+0.0	-28.6	+0.1	+0.0	35.0	40.0	-5.0	Vert
^	61.308M	55.7	+7.9 +1.3	+0.0	-28.6	+0.1	+0.0	36.4	40.0	-3.6	Vert
7	37.097M QP	46.4	+15.5 +1.1	+0.0	-28.4	+0.1	+0.0	34.7	40.0	-5.3	Vert
^	37.094M	47.0	+15.5 +1.1	+0.0	-28.4	+0.1	+0.0	35.3	40.0	-4.7	Vert
9	400.080M QP	49.4	+0.0 +3.8	+15.5	-28.3	+0.3	+0.0	40.7	46.0	-5.3	Horiz
^	400.078M	51.6	+0.0 +3.8	+15.5	-28.3	+0.3	+0.0	42.9	46.0	-3.1	Horiz
11	100.099M	52.5	+11.5 +1.8	+0.0	-28.4	+0.1	+0.0	37.5	43.5	-6.0	Vert
12	350.078M	45.6	+0.0 +3.5	+18.7	-28.2	+0.3	+0.0	39.9	46.0	-6.1	Horiz
13	350.087M	45.6	+0.0 +3.5	+18.7	-28.2	+0.3	+0.0	39.9	46.0	-6.1	Vert
14	46.766M QP	48.8	+12.0 +1.2	+0.0	-28.3	+0.1	+0.0	33.8	40.0	-6.2	Vert
^	46.759M	50.9	+12.0 +1.2	+0.0	-28.3	+0.1	+0.0	35.9	40.0	-4.1	Vert
16	80.904M	53.3	+7.0 +1.6	+0.0	-28.2	+0.1	+0.0	33.8	40.0	-6.2	Vert
17	768.103M	39.6	+0.0 +5.6	+21.9	-27.8	+0.4	+0.0	39.7	46.0	-6.3	Horiz
18	96.000M	53.0	+10.6 +1.7	+0.0	-28.3	+0.1	+0.0	37.1	43.5	-6.4	Vert
19	768.106M	39.4	+0.0 +5.6	+21.9	-27.8	+0.4	+0.0	39.5	46.0	-6.5	Vert
20	600.059M QP	43.1	+0.0 +4.9	+18.9	-28.1	+0.4	+0.0	39.2	46.0	-6.8	Horiz
^	600.054M	46.2	+0.0 +4.9	+18.9	-28.1	+0.4	+0.0	42.3	46.0	-3.7	Horiz
22	448.793M	47.3	+0.0 +4.0	+16.2	-28.7	+0.4	+0.0	39.2	46.0	-6.8	Horiz
23	37.497M QP	44.9	+15.4 +1.1	+0.0	-28.4	+0.1	+0.0	33.1	40.0	-6.9	Horiz
^	37.517M	50.1	+15.4 +1.1	+0.0	-28.4	+0.1	+0.0	38.3	40.0	-1.7	Horiz
25	112.561M	48.8	+14.0 +1.9	+0.0	-28.4	+0.2	+0.0	36.5	43.5	-7.0	Vert
26	320.084M QP	42.7	+0.0 +3.4	+20.9	-28.3	+0.3	+0.0	39.0	46.0	-7.0	Horiz
^	320.093M	44.8	+0.0 +3.4	+20.9	-28.3	+0.3	+0.0	41.1	46.0	-4.9	Horiz

28	800.056M	38.7	+0.0 +5.7	+21.5	-27.6	+0.5	+0.0	38.8	46.0	-7.2	Horiz
29	760.343M	38.6	+0.0 +5.5	+22.0	-27.8	+0.4	+0.0	38.7	46.0	-7.3	Horiz
30	665.307M	39.7	+0.0 +5.1	+21.4	-27.9	+0.4	+0.0	38.7	46.0	-7.3	Horiz
31	300.100M QP	40.9	+0.0 +3.3	+22.5	-28.3	+0.3	+0.0	38.7	46.0	-7.3	Horiz
^	300.099M	42.8	+0.0 +3.3	+22.5	-28.3	+0.3	+0.0	40.6	46.0	-5.4	Horiz
33	640.099M QP	40.4	+0.0 +5.1	+20.5	-27.9	+0.4	+0.0	38.5	46.0	-7.5	Vert
^	640.100M	42.5	+0.0 +5.1	+20.5	-27.9	+0.4	+0.0	40.6	46.0	-5.4	Vert
35	600.068M	42.4	+0.0 +4.9	+18.9	-28.1	+0.4	+0.0	38.5	46.0	-7.5	Vert
36	320.071M	42.2	+0.0 +3.4	+20.9	-28.3	+0.3	+0.0	38.5	46.0	-7.5	Vert
37	100.102M QP	50.8	+11.5 +1.8	+0.0	-28.4	+0.1	+0.0	35.8	43.5	-7.7	Horiz
^	100.106M	53.7	+11.5 +1.8	+0.0	-28.4	+0.1	+0.0	38.7	43.5	-4.8	Horiz
39	331.903M QP	42.8	+0.0 +3.4	+20.0	-28.2	+0.3	+0.0	38.3	46.0	-7.7	Horiz
^	331.905M	46.1	+0.0 +3.4	+20.0	-28.2	+0.3	+0.0	41.6	46.0	-4.4	Horiz
41	512.059M	44.7	+0.0 +4.5	+17.2	-28.5	+0.4	+0.0	38.3	46.0	-7.7	Vert
42	400.064M	47.0	+0.0 +3.8	+15.5	-28.3	+0.3	+0.0	38.3	46.0	-7.7	Vert
43	77.899M	51.9	+6.8 +1.6	+0.0	-28.3	+0.1	+0.0	32.1	40.0	-7.9	Horiz
44	464.396M	45.7	+0.0 +4.1	+16.4	-28.6	+0.4	+0.0	38.0	46.0	-8.0	Horiz
45	200.080M	44.2	+16.8 +2.6	+0.0	-28.4	+0.2	+0.0	35.4	43.5	-8.1	Horiz
46	665.362M	38.7	+0.0 +5.1	+21.4	-27.9	+0.4	+0.0	37.7	46.0	-8.3	Vert
47	800.062M	37.1	+0.0 +5.7	+21.5	-27.6	+0.5	+0.0	37.2	46.0	-8.8	Vert
48	315.071M	40.5	+0.0 +3.4	+21.3	-28.3	+0.3	+0.0	37.2	46.0	-8.8	Vert
49	200.074M	43.1	+16.8 +2.6	+0.0	-28.4	+0.2	+0.0	34.3	43.5	-9.2	Vert
50	448.660M	44.2	+0.0 +4.0	+16.2	-28.7	+0.4	+0.0	36.1	46.0	-9.9	Vert

51	512.055M	42.1	+0.0 +4.4	+17.2	-28.5	+0.4	+0.0	35.6	46.0	-10.4	Horiz
52	70.781M QP	49.5	+6.9 +1.5	+0.0	-28.6	+0.1	+0.0	29.4	40.0	-10.6	Vert
^	70.806M	54.8	+6.9 +1.5	+0.0	-28.6	+0.1	+0.0	34.7	40.0	-5.3	Vert
54	105.085M	46.4	+12.5 +1.8	+0.0	-28.4	+0.1	+0.0	32.4	43.5	-11.1	Vert

Test Location: CKC Laboratories, Inc. •110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**
Specification: **FCC 15.247(c)**
Work Order #: **79346** Date: 08/07/2002
Test Type: **Maximized emission** Time: 17:23:22
Equipment: **Cable Modem** Sequence#: 2
Manufacturer: Motorola BCS Tested By: Stuart Yamamoto
Model: SBG 1000 P5
S/N: 00080ED2F1E0

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cable Modem*	Motorola BCS	SBG 1000 P5	00080ED2F1E0

Support Devices:

Function	Manufacturer	Model #	S/N
C6U Converter	General Instruments	C6U	J5M7000101358
Hub	Bay Networks	DS104	DS14H08355155
Computer	Toshiba	PA1215UV	04694236
Computer	Dolch	L-PAC 585	DCS2016538
Thermal Printer	SII	DPU-414	1033083A
Mouse	Gateway	MOSXK	
Keyboard	Dell	SK-1000RS	M940111179
Monitor	NEC	JC-1538VMA	5900265EA
Computer	Gateway	G6-366C	0013168086
Parallel Printer	Epson	P156A	CMR1545596
Head End	Cisco	uBR-MC11C	CN1ISS0AA

Test Conditions / Notes:

The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The "F" connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The Dolch computer is running the TFTPD32 program. The EUT is transmitting on Channel 1. Temperature: 25°C, Humidity: 46%, Pressure: 100kPa. Voltage to EUT is 120 Vac 60Hz. Data sheet represents emissions from the frequency range of 1.0 to 25.0 GHz.

Transducer Legend:

T1=6" SMA cable #2212 101701	T2=Heliax #18 70' 11Sept2001
T3=Horn Antenna sn6246	T4=HP3017A sn3123A00281 11-Sept-01
T5=12' SMA 26 GHz Cable	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	1605.707M	56.0	+0.2 +1.5	+3.5	+24.9	-38.6	+0.0	47.5	54.0	-6.5	Vert
2	7236.000M Ave	36.0	+0.3 +4.8	+8.0	+35.8	-37.7	+0.0	47.2	54.0	-6.8	Vert
^	7236.009M	47.0	+0.3 +4.8	+8.0	+35.8	-37.7	+0.0	58.2	54.0	+4.2	Vert

4	7236.408M Ave	35.7	+0.3 +4.8	+8.0	+35.8	-37.7	+0.0	46.9	54.0	-7.1	Horiz
^	7236.408M	46.5	+0.3 +4.8	+8.0	+35.8	-37.7	+0.0	57.7	54.0	+3.7	Horiz
6	1504.958M	55.3	+0.2 +1.5	+3.3	+24.5	-38.9	+0.0	45.9	54.0	-8.1	Horiz
7	1040.100M	56.1	+0.2 +1.1	+2.7	+24.0	-40.5	+0.0	43.6	54.0	-10.4	Vert
8	1811.291M Ave	50.9	+0.2 +1.6	+3.6	+25.7	-38.5	+0.0	43.5	54.0	-10.5	Horiz
^	1811.291M	62.3	+0.2 +1.6	+3.6	+25.7	-38.5	+0.0	54.9	54.0	+0.9	Horiz
10	4834.700M	38.3	+0.3 +2.9	+6.2	+32.8	-37.2	+0.0	43.3	54.0	-10.7	Horiz
11	1605.760M	53.2	+0.2	+3.5	+24.9	-38.6	+0.0	43.2	54.0	-10.8	Horiz
12	1745.022M	51.7	+0.2	+3.6	+25.5	-38.6	+0.0	42.4	54.0	-11.6	Horiz
13	1809.600M Ave	46.7	+0.2 +1.6	+3.6	+25.7	-38.5	+0.0	39.3	54.0	-14.7	Vert
^	1809.610M	57.0	+0.2 +1.6	+3.6	+25.7	-38.5	+0.0	49.6	54.0	-4.4	Vert
15	1504.958M Ave	47.2	+0.2 +1.5	+3.3	+24.5	-38.9	+0.0	37.8	54.0	-16.2	Vert
^	1504.958M	57.6	+0.2 +1.5	+3.3	+24.5	-38.9	+0.0	48.2	54.0	-5.8	Vert
17	4823.974M Ave	32.1	+0.3 +2.9	+6.2	+32.8	-37.2	+0.0	37.1	54.0	-16.9	Vert
^	4823.998M	45.0	+0.3 +2.9	+6.2	+32.8	-37.2	+0.0	50.0	54.0	-4.0	Vert
19	1215.895M	49.2	+0.2	+2.9	+24.2	-39.6	+0.0	36.9	54.0	-17.1	Horiz
20	1000.039M	49.9	+0.2	+2.6	+23.9	-40.7	+0.0	35.9	54.0	-18.1	Horiz
21	1100.001M	48.9	+0.2	+2.8	+24.0	-40.1	+0.0	35.8	54.0	-18.2	Horiz
22	1071.293M Ave	45.8	+0.2 +1.2	+2.7	+24.0	-40.3	+0.0	33.6	54.0	-20.4	Vert
^	1071.265M	64.1	+0.2 +1.2	+2.7	+24.0	-40.3	+0.0	51.9	54.0	-2.1	Vert

Test Location: CKC Laboratories, Inc. •110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**
Specification: **FCC 15.247(c)**
Work Order #: **79346** Date: 08/15/2002
Test Type: **Maximized emission** Time: 16:42:31
Equipment: **Cable Modem** Sequence#: 10
Manufacturer: Motorola BCS Tested By: Stuart Yamamoto
Model: SBG 1000 P5
S/N: 00080ED2F1E0

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cable Modem*	Motorola BCS	SBG 1000 P5	00080ED2F1E0

Support Devices:

Function	Manufacturer	Model #	S/N
C6U Converter	General Instruments	C6U	J5M7000101358
Hub	Bay Networks	DS104	DS14H08355155
Computer	Toshiba	PA1215UV	04694236
Computer	Dolch	L-PAC 585	DCS2016538
Thermal Printer	SII	DPU-414	1033083A
Mouse	Gateway	MOSXK	
Keyboard	Dell	SK-1000RS	M940111179
Monitor	NEC	JC-1538VMA	5900265EA
Computer	Gateway	G6-366C	0013168086
Parallel Printer	Epson	P156A	CMR1545596
Head End	Cisco	uBR-MC11C	CN1ISS0AA

Test Conditions / Notes:

The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The "F" connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The Dolch computer is running the TFTPD32 program. The EUT is transmitting on Channel 6. Temperature: 23°C, Humidity: 52%, Pressure: 100kPa. Voltage to EUT is 120 Vac 60Hz. Data sheet represents emissions from the frequency range of 1.0 to 25.0 GHz.

Transducer Legend:

T1=6" SMA cable #2212 101701	T2=Heliax #18 70' 11Sept2001
T3=Horn Antenna sn6246	T4=HP3017A sn3123A00281 11-Sept-01
T5=12' SMA 26 GHz Cable	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	7310.691M	40.5	+0.0	+8.1	+35.9	-37.8	+0.0	51.6	54.0	-2.4	Vert
	Ave		+4.9								
^	7310.688M	51.1	+0.0	+8.1	+35.9	-37.8	+0.0	62.2	54.0	+8.2	Vert
			+4.9								

3	7310.802M Ave	38.3	+0.0 +4.9	+8.1	+35.9	-37.8	+0.0	49.4	54.0	-4.6	Horiz
^	7310.838M	48.9	+0.0 +4.9	+8.1	+35.9	-37.8	+0.0	60.0	54.0	+6.0	Horiz
5	1844.400M	56.3	+0.2 +0.0	+3.6	+25.9	-38.4	+0.0	47.6	54.0	-6.4	Vert
6	4873.871M	42.3	+0.0 +2.9	+6.3	+32.9	-37.2	+0.0	47.2	54.0	-6.8	Horiz
7	1647.323M	56.4	+0.2 +0.0	+3.5	+25.1	-38.6	+0.0	46.6	54.0	-7.4	Horiz
8	1647.368M	55.8	+0.2 +0.0	+3.5	+25.1	-38.6	+0.0	46.0	54.0	-8.0	Vert
9	1097.825M	59.0	+0.2 +0.0	+2.8	+24.0	-40.1	+0.0	45.9	54.0	-8.1	Vert
10	1548.711M Ave	54.1	+0.2 +0.0	+3.4	+24.7	-38.8	+0.0	43.6	54.0	-10.4	Vert
^	1548.703M	62.6	+0.2 +0.0	+3.4	+24.7	-38.8	+0.0	52.1	54.0	-1.9	Vert
12	1601.616M	52.6	+0.2 +0.0	+3.5	+24.9	-38.6	+0.0	42.6	54.0	-11.4	Vert
13	1489.394M	53.1	+0.2 +0.0	+3.3	+24.5	-38.9	+0.0	42.2	54.0	-11.8	Vert
14	1844.172M Ave	47.5	+0.0 +1.6	+3.6	+25.9	-38.4	+0.0	40.2	54.0	-13.8	Horiz
^	1844.120M	58.1	+0.0 +1.6	+3.6	+25.9	-38.4	+0.0	50.8	54.0	-3.2	Horiz
16	1065.979M	52.7	+0.2 +0.0	+2.7	+24.0	-40.3	+0.0	39.3	54.0	-14.7	Vert
17	4873.951M Ave	33.7	+0.0 +2.9	+6.3	+32.9	-37.2	+0.0	38.6	54.0	-15.4	Vert
^	4874.018M	46.0	+0.0 +2.9	+6.3	+32.9	-37.2	+0.0	50.9	54.0	-3.1	Vert
19	1216.075M	50.1	+0.2 +0.0	+2.9	+24.2	-39.6	+0.0	37.8	54.0	-16.2	Vert
20	1040.104M	51.2	+0.2 +0.0	+2.7	+24.0	-40.5	+0.0	37.6	54.0	-16.4	Vert
21	1553.234M Ave	33.5	+0.2 +0.0	+3.4	+24.7	-38.7	+0.0	23.1	54.0	-31.0	Horiz
^	1553.182M	61.5	+0.2 +0.0	+3.4	+24.7	-38.7	+0.0	51.1	54.0	-2.9	Horiz

Test Location: CKC Laboratories, Inc. •110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**
Specification: **FCC 15.247(c)**
Work Order #: **79346** Date: 08/15/2002
Test Type: **Maximized emission** Time: 17:34:12
Equipment: **Cable Modem** Sequence#: 11
Manufacturer: Motorola BCS Tested By: Stuart Yamamoto
Model: SBG 1000 P5
S/N: 00080ED2F1E0

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cable Modem*	Motorola BCS	SBG 1000 P5	00080ED2F1E0

Support Devices:

Function	Manufacturer	Model #	S/N
C6U Converter	General Instruments	C6U	J5M7000101358
Hub	Bay Networks	DS104	DS14H08355155
Computer	Toshiba	PA1215UV	04694236
Computer	Dolch	L-PAC 585	DCS2016538
Thermal Printer	SII	DPU-414	1033083A
Mouse	Gateway	MOSXK	
Keyboard	Dell	SK-1000RS	M940111179
Monitor	NEC	JC-1538VMA	5900265EA
Computer	Gateway	G6-366C	0013168086
Parallel Printer	Epson	P156A	CMR1545596
Head End	Cisco	uBR-MC11C	CN1ISS0AA

Test Conditions / Notes:

The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The "F" connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The Dolch computer is running the TFTPD32 program. The EUT is transmitting on Channel 11. Temperature: 23°C, Humidity: 52%, Pressure: 100kPa. Voltage to EUT is 120 Vac 60Hz. Data sheet represents emissions from the frequency range of 1.0 to 25.0 GHz.

Transducer Legend:

T1=6" SMA cable #2212 101701	T2=Heliax #18 70' 11Sept2001
T3=Horn Antenna sn6246	T4=HP3017A sn3123A00281 11-Sept-01
T5=12' SMA 26 GHz Cable	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	1882.180M	58.1	+0.2	+3.6	+26.0	-38.3	+0.0	49.6	54.0	-4.4	Vert
	Ave		+0.0								
^	1882.172M	68.4	+0.2	+3.6	+26.0	-38.3	+0.0	59.9	54.0	+5.9	Vert
			+0.0								

3	7385.929M Ave	38.0	+0.0 +4.9	+8.1	+36.0	-37.9	+0.0	49.1	54.0	-4.9	Horiz
^	7385.928M	49.0	+0.0 +4.9	+8.1	+36.0	-37.9	+0.0	60.1	54.0	+6.1	Horiz
5	7385.835M Ave	35.6	+0.0 +0.0	+8.1	+36.0	-37.9	+0.0	46.7	54.0	-7.3	Vert
^	7385.833M	46.9	+0.0 +4.9	+8.1	+36.0	-37.9	+0.0	58.0	54.0	+4.0	Vert
7	1121.396M	59.0	+0.2 +0.0	+2.8	+24.1	-40.0	+0.0	46.1	54.0	-7.9	Vert
8	4923.891M	39.7	+0.0 +2.8	+6.3	+33.0	-37.2	+0.0	44.6	54.0	-9.4	Horiz
9	1688.967M	52.4	+0.2 +0.0	+3.6	+25.3	-38.6	+0.0	42.9	54.0	-11.1	Horiz
10	1688.970M Ave	51.8	+0.2 +0.0	+3.6	+25.3	-38.6	+0.0	42.3	54.0	-11.7	Vert
^	1688.968M	60.1	+0.2 +0.0	+3.6	+25.3	-38.6	+0.0	50.6	54.0	-3.4	Vert
12	1592.304M Ave	51.5	+0.2 +0.0	+3.5	+24.9	-38.6	+0.0	41.5	54.0	-12.5	Vert
^	1592.293M	61.5	+0.2 +0.0	+3.5	+24.9	-38.6	+0.0	51.5	54.0	-2.5	Vert
14	1882.227M Ave	46.5	+0.2 +0.0	+3.6	+26.0	-38.3	+0.0	38.0	54.0	-16.0	Horiz
^	1882.223M	57.9	+0.2 +0.0	+3.6	+26.0	-38.3	+0.0	49.4	54.0	-4.6	Horiz
16	4923.655M Ave	31.8	+0.0 +2.8	+6.3	+33.0	-37.2	+0.0	36.7	54.0	-17.3	Vert
^	4923.643M	44.6	+0.0 +2.8	+6.3	+33.0	-37.2	+0.0	49.5	54.0	-4.5	Vert

Test Location: CKC Laboratories, Inc. •110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**
Specification: **FCC 15.107/15.207**
Work Order #: **79346** Date: 08/16/2002
Test Type: **Conducted Emissions** Time: 2:54:42 PM
Equipment: **Cable Modem** Sequence#: 14
Manufacturer: Motorola BCS Tested By: Stuart Yamamoto
Model: SBG 1000 P5 120V 60Hz
S/N: 00080ED2F1E0

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cable Modem*	Motorola BCS	SBG 1000 P5	00080ED2F1E0

Support Devices:

Function	Manufacturer	Model #	S/N
C6U Converter	General Instruments	C6U	J5M7000101358
Hub	Bay Networks	DS104	DS14H08355155
Computer	Toshiba	PA1215UV	04694236
Computer	Dolch	L-PAC 585	DCS2016538
Thermal Printer	SII	DPU-414	1033083A
Mouse	Gateway	MOSXK	
Keyboard	Dell	SK-1000RS	M940111179
Monitor	NEC	JC-1538VMA	5900265EA
Computer	Gateway	G6-366C	0013168086
Parallel Printer	Epson	P156A	CMR1545596
Head End	Cisco	uBR-MC11C	CN1ISS0AA

Test Conditions / Notes:

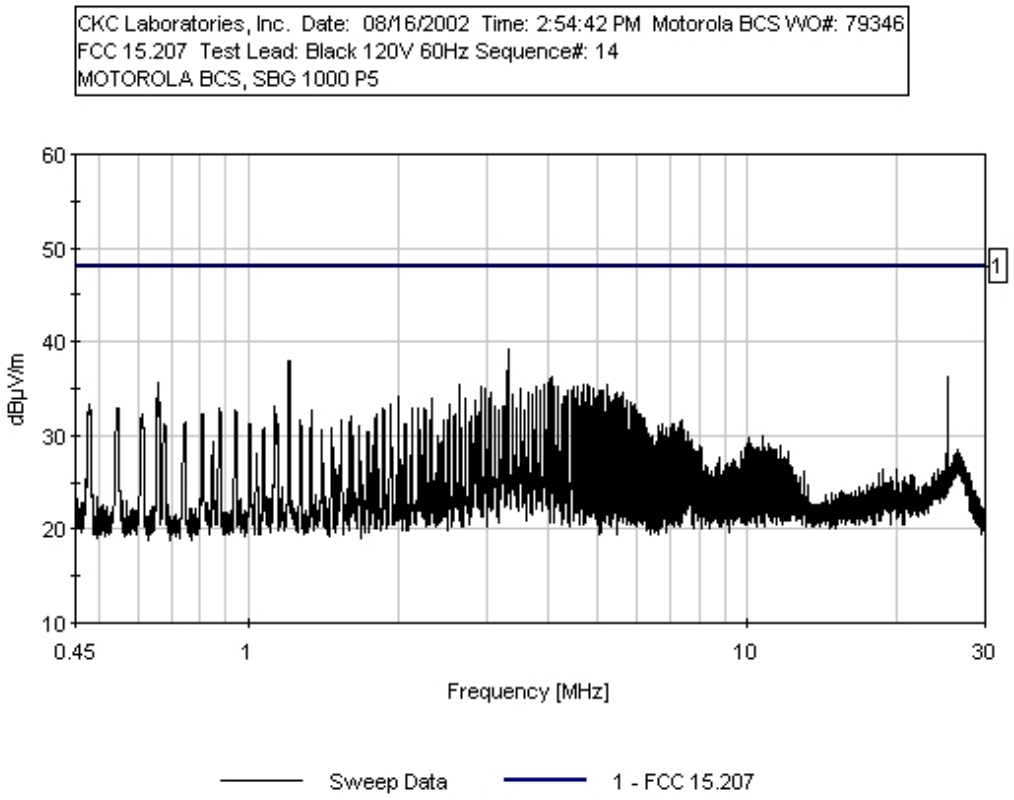
The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The "F" connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The Dolch computer is running the TFTPD32 program. The EUT is transmitting on Channel 1. Temperature: 25°C, Humidity: 50%, Pressure: 100kPa. Voltage to EUT is 120 Vac 60Hz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Lead: Black

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	3.315M	39.3					+0.0	39.3	48.0	-8.7	Black
2	1.207M	38.0					+0.0	38.0	48.0	-10.0	Black
3	4.044M	36.3					+0.0	36.3	48.0	-11.7	Black
4	25.218M	36.2					+0.0	36.2	48.0	-11.8	Black
5	3.979M	35.7					+0.0	35.7	48.0	-12.3	Black

6	656.778k	35.6	+0.0	35.6	48.0	-12.4	Black
7	2.655M	35.5	+0.0	35.5	48.0	-12.5	Black
8	4.767M	35.5	+0.0	35.5	48.0	-12.5	Black
9	660.790k	35.4	+0.0	35.4	48.0	-12.6	Black
10	3.911M	35.4	+0.0	35.4	48.0	-12.6	Black
11	4.701M	35.4	+0.0	35.4	48.0	-12.6	Black
12	5.230M	35.4	+0.0	35.4	48.0	-12.6	Black
13	2.922M	35.3	+0.0	35.3	48.0	-12.7	Black
14	3.780M	35.3	+0.0	35.3	48.0	-12.7	Black
15	4.106M	35.3	+0.0	35.3	48.0	-12.7	Black
16	4.177M	35.3	+0.0	35.3	48.0	-12.7	Black
17	4.504M	35.3	+0.0	35.3	48.0	-12.7	Black
18	4.830M	35.3	+0.0	35.3	48.0	-12.7	Black
19	4.570M	35.2	+0.0	35.2	48.0	-12.8	Black
20	3.512M	35.1	+0.0	35.1	48.0	-12.9	Black
21	2.988M	34.9	+0.0	34.9	48.0	-13.1	Black
22	4.894M	34.9	+0.0	34.9	48.0	-13.1	Black
23	3.842M	34.8	+0.0	34.8	48.0	-13.2	Black
24	5.029M	34.8	+0.0	34.8	48.0	-13.2	Black
25	5.161M	34.8	+0.0	34.8	48.0	-13.2	Black
26	4.374M	34.7	+0.0	34.7	48.0	-13.3	Black
27	4.438M	34.7	+0.0	34.7	48.0	-13.3	Black
28	5.095M	34.7	+0.0	34.7	48.0	-13.3	Black
29	4.636M	34.6	+0.0	34.6	48.0	-13.4	Black
30	5.625M	34.6	+0.0	34.6	48.0	-13.4	Black


CKC Laboratories, Inc. Date: 08/16/2002 Time: 2:54:42 PM Motorola BCS WO#: 79346
FCC 15.207 Test Lead: Black 120V 60Hz Sequence#: 14
MOTOROLA BCS, SBG 1000 P5
60
50
40
30
20
10
dBµV/m
0.45
1
10
30
Frequency [MHz]
1
Sweep Data
1 - FCC 15.207

Test Location: CKC Laboratories, Inc. •110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**
Specification: **FCC 15.107/15.207**
Work Order #: **79346** Date: 08/16/2002
Test Type: **Conducted Emissions** Time: 2:59:05 PM
Equipment: **Cable Modem** Sequence#: 15
Manufacturer: Motorola BCS Tested By: Stuart Yamamoto
Model: SBG 1000 P5 120V 60Hz
S/N: 00080ED2F1E0

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cable Modem*	Motorola BCS	SBG 1000 P5	00080ED2F1E0

Support Devices:

Function	Manufacturer	Model #	S/N
C6U Converter	General Instruments	C6U	J5M7000101358
Hub	Bay Networks	DS104	DS14H08355155
Computer	Toshiba	PA1215UV	04694236
Computer	Dolch	L-PAC 585	DCS2016538
Thermal Printer	SII	DPU-414	1033083A
Mouse	Gateway	MOSXK	
Keyboard	Dell	SK-1000RS	M940111179
Monitor	NEC	JC-1538VMA	5900265EA
Computer	Gateway	G6-366C	0013168086
Parallel Printer	Epson	P156A	CMR1545596
Head End	Cisco	uBR-MC11C	CN1ISS0AA

Test Conditions / Notes:

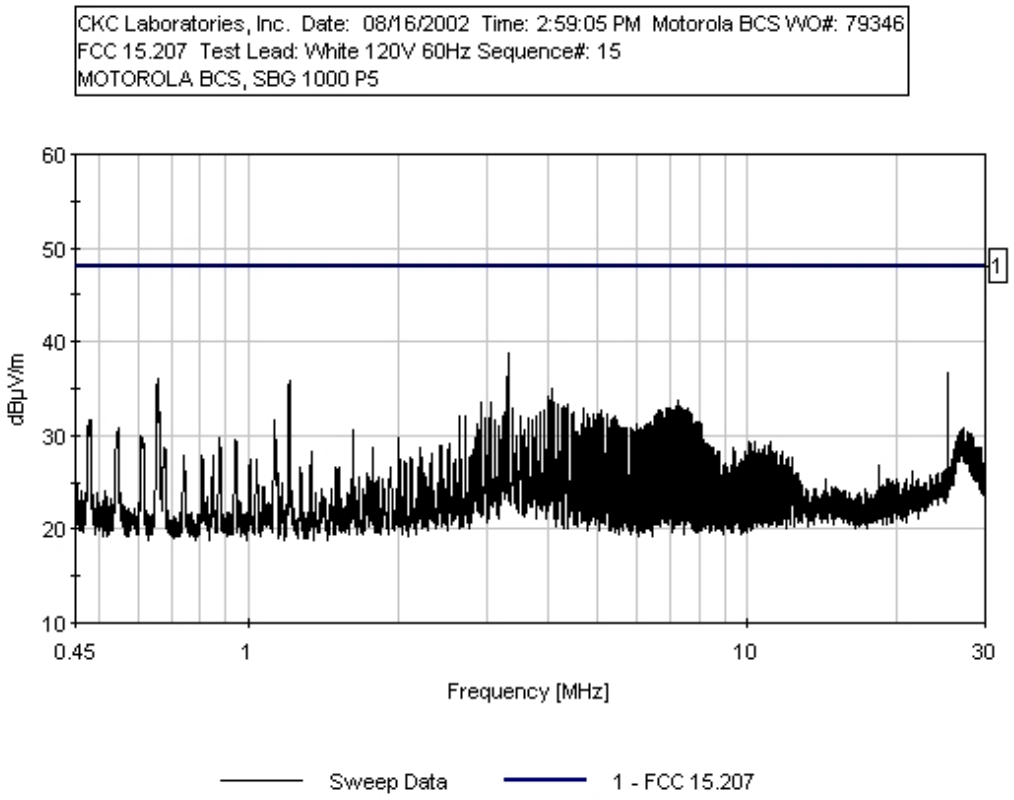
The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The "F" connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The Dolch computer is running the TFTPD32 program. The EUT is transmitting on Channel 1. Temperature: 25°C, Humidity: 50%, Pressure: 100kPa. Voltage to EUT is 120 Vac 60Hz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Lead: White

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	3.315M	38.8					+0.0	38.8	48.0	-9.2	White
2	25.209M	36.7					+0.0	36.7	48.0	-11.3	White
3	659.185k	36.1					+0.0	36.1	48.0	-11.9	White
4	1.207M	35.9					+0.0	35.9	48.0	-12.1	White
5	656.778k	35.7					+0.0	35.7	48.0	-12.3	White

6	4.044M	35.1	+0.0	35.1	48.0	-12.9	White
7	3.975M	34.2	+0.0	34.2	48.0	-13.8	White
8	7.274M	33.7	+0.0	33.7	48.0	-14.3	White
9	2.920M	33.5	+0.0	33.5	48.0	-14.5	White
10	3.052M	33.5	+0.0	33.5	48.0	-14.5	White
11	4.108M	33.5	+0.0	33.5	48.0	-14.5	White
12	4.177M	33.3	+0.0	33.3	48.0	-14.7	White
13	4.374M	33.3	+0.0	33.3	48.0	-14.7	White
14	7.208M	33.2	+0.0	33.2	48.0	-14.8	White
15	7.340M	33.2	+0.0	33.2	48.0	-14.8	White
16	4.307M	33.1	+0.0	33.1	48.0	-14.9	White
17	6.877M	33.0	+0.0	33.0	48.0	-15.0	White
18	6.940M	33.0	+0.0	33.0	48.0	-15.0	White
19	7.009M	33.0	+0.0	33.0	48.0	-15.0	White
20	3.379M	32.9	+0.0	32.9	48.0	-15.1	White
21	4.243M	32.9	+0.0	32.9	48.0	-15.1	White
22	7.399M	32.9	+0.0	32.9	48.0	-15.1	White
23	7.597M	32.9	+0.0	32.9	48.0	-15.1	White
24	4.695M	32.8	+0.0	32.8	48.0	-15.2	White
25	3.909M	32.7	+0.0	32.7	48.0	-15.3	White
26	6.678M	32.7	+0.0	32.7	48.0	-15.3	White
27	7.078M	32.7	+0.0	32.7	48.0	-15.3	White
28	7.142M	32.7	+0.0	32.7	48.0	-15.3	White
29	7.465M	32.6	+0.0	32.6	48.0	-15.4	White
30	7.531M	32.6	+0.0	32.6	48.0	-15.4	White


CKC Laboratories, Inc. Date: 08/16/2002 Time: 2:59:05 PM Motorola BCS WO#: 79346
FCC 15.207 Test Lead: White 120V 60Hz Sequence#: 15
MOTOROLA BCS, SBG 1000 P5
60
50
40
30
20
10
dBµV/m
0.45
1
10
30
Frequency [MHz]
1
Sweep Data
1 - FCC 15.207

Test Location:	CKC Laboratories, Inc. •110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112		
Customer:	**Motorola BCS**		
Specification:	**FCC 15.109 Class B**		
Work Order #:	**79346**	Date:	08/08/2002
Test Type:	**Maximized emission**	Time:	14:04:01
Equipment:	**Cable Modem**	Sequence#:	4
Manufacturer:	Motorola BCS	Tested By:	Stuart Yamamoto
Model:	SBG 1000 P5		
S/N:	00080ED2F1E0		

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cable Modem*	Motorola BCS	SBG 1000 P5	00080ED2F1E0

Support Devices:

Function	Manufacturer	Model #	S/N
C6U Converter	General Instruments	C6U	J5M7000101358
Hub	Bay Networks	DS104	DS14H08355155
Computer	Toshiba	PA1215UV	04694236
Computer	Dolch	L-PAC 585	DCS2016538
Thermal Printer	SII	DPU-414	1033083A
Mouse	Gateway	MOSXK	
Keyboard	Dell	SK-1000RS	M940111179
Monitor	NEC	JC-1538VMA	5900265EA
Computer	Gateway	G6-366C	0013168086
Parallel Printer	Epson	P156A	CMR1545596
Head End	Cisco	uBR-MC11C	CN1ISS0AA

Test Conditions / Notes:

The EUT is a cable modem. The EUT's USB and one of its ethernet ports is connected to a desktop computer via shielded cable. The other four ethernet ports are connected in loopback with shielded cables. Connected to the parallel port of the EUT is a thermal printer. The HPNA ports have unshielded terminated cables connected. The "F" connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The Dolch computer is running the TFTPD32 program. Temperature: 24°C, Humidity: 53%, Pressure: 100kPa. Voltage to EUT is 120 Vac 60Hz.

Transducer Legend:

T1=Bicon 092401	T2=Log 331 092401
T3=Preamp 8447D 090501	T4=Cable #10 070803
T5=Cable #15 120602	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	48.065M	52.1	+11.5	+0.0	-28.3	+0.1	+0.0	36.6	40.0	-3.4	Vert
	QP		+1.2								
^	48.069M	55.3	+11.5	+0.0	-28.3	+0.1	+0.0	39.8	40.0	-0.2	Vert
			+1.2								
3	640.054M	44.2	+0.0	+20.5	-27.9	+0.4	+0.0	42.3	46.0	-3.7	Horiz
	QP		+5.1								
^	640.064M	45.5	+0.0	+20.5	-27.9	+0.4	+0.0	43.6	46.0	-2.4	Horiz
			+5.1								

5	82.547M QP	53.5	+7.4 +1.6	+0.0	-28.2	+0.1	+0.0	34.4	40.0	-5.6	Horiz
^	82.584M	57.0	+7.4 +1.6	+0.0	-28.2	+0.1	+0.0	37.9	40.0	-2.1	Horiz
7	390.013M QP	48.4	+0.0 +3.7	+16.1	-28.3	+0.3	+0.0	40.2	46.0	-5.8	Horiz
^	390.017M	49.0	+0.0 +3.7	+16.1	-28.3	+0.3	+0.0	40.8	46.0	-5.2	Horiz
9	46.844M QP	49.1	+12.0 +1.2	+0.0	-28.3	+0.1	+0.0	34.1	40.0	-5.9	Vert
^	46.857M	51.9	+11.9 +1.2	+0.0	-28.3	+0.1	+0.0	36.8	40.0	-3.2	Vert
11	768.046M QP	39.7	+0.0 +5.6	+21.9	-27.8	+0.4	+0.0	39.8	46.0	-6.2	Vert
^	768.053M	40.7	+0.0 +5.6	+21.9	-27.8	+0.4	+0.0	40.8	46.0	-5.2	Vert
13	330.057M	44.1	+0.0 +3.4	+20.2	-28.2	+0.3	+0.0	39.8	46.0	-6.2	Horiz
14	640.051M QP	41.6	+0.0 +5.1	+20.5	-27.9	+0.4	+0.0	39.7	46.0	-6.3	Vert
^	640.077M	43.3	+0.0 +5.1	+20.5	-27.9	+0.4	+0.0	41.4	46.0	-4.6	Vert
16	390.010M	47.9	+0.0 +3.7	+16.1	-28.3	+0.3	+0.0	39.7	46.0	-6.3	Vert
17	768.087M QP	39.6	+0.0 +5.6	+21.9	-27.8	+0.4	+0.0	39.7	46.0	-6.3	Horiz
^	768.077M	40.1	+0.0 +5.6	+21.9	-27.8	+0.4	+0.0	40.2	46.0	-5.8	Horiz
19	77.895M	53.2	+6.8 +1.6	+0.0	-28.3	+0.1	+0.0	33.4	40.0	-6.6	Horiz
20	600.066M	43.0	+0.0 +4.9	+18.9	-28.1	+0.4	+0.0	39.1	46.0	-6.9	Horiz
21	331.878M	43.6	+0.0 +3.4	+20.0	-28.2	+0.3	+0.0	39.1	46.0	-6.9	Horiz
22	112.552M QP	48.8	+14.0 +1.9	+0.0	-28.4	+0.2	+0.0	36.5	43.5	-7.0	Vert
^	112.549M	50.1	+14.0 +1.9	+0.0	-28.4	+0.2	+0.0	37.8	43.5	-5.7	Vert
24	350.056M QP	44.6	+0.0 +3.5	+18.7	-28.2	+0.3	+0.0	38.9	46.0	-7.1	Horiz
^	350.068M	46.2	+0.0 +3.5	+18.7	-28.2	+0.3	+0.0	40.5	46.0	-5.5	Horiz
26	320.090M QP	42.6	+0.0 +3.4	+20.9	-28.3	+0.3	+0.0	38.9	46.0	-7.1	Horiz
^	320.055M	43.7	+0.0 +3.4	+20.9	-28.3	+0.3	+0.0	40.0	46.0	-6.0	Horiz
28	176.264M QP	44.6	+17.4 +2.4	+0.0	-28.2	+0.2	+0.0	36.4	43.5	-7.1	Horiz
^	176.262M	46.2	+17.4 +2.4	+0.0	-28.2	+0.2	+0.0	38.0	43.5	-5.5	Horiz

30	37.411M QP	44.7	+15.4 +1.1	+0.0	-28.4	+0.1	+0.0	32.9	40.0	-7.1	Vert
^	37.411M	46.9	+15.4 +1.1	+0.0	-28.4	+0.1	+0.0	35.1	40.0	-4.9	Vert
32	70.802M	53.0	+6.9 +1.5	+0.0	-28.6	+0.1	+0.0	32.9	40.0	-7.1	Vert
33	350.093M	44.5	+0.0 +3.5	+18.7	-28.2	+0.3	+0.0	38.8	46.0	-7.2	Vert
34	704.906M	38.6	+0.0 +5.2	+22.6	-28.0	+0.4	+0.0	38.8	46.0	-7.2	Horiz
35	300.071M	41.0	+0.0 +3.3	+22.5	-28.3	+0.3	+0.0	38.8	46.0	-7.2	Horiz
36	400.060M QP	47.4	+0.0 +3.8	+15.5	-28.3	+0.3	+0.0	38.7	46.0	-7.3	Horiz
^	400.068M	49.2	+0.0 +3.8	+15.5	-28.3	+0.3	+0.0	40.5	46.0	-5.5	Horiz
38	800.050M	38.5	+0.0 +5.7	+21.5	-27.6	+0.5	+0.0	38.6	46.0	-7.4	Horiz
39	112.567M	48.4	+14.0 +1.9	+0.0	-28.4	+0.2	+0.0	36.1	43.5	-7.4	Horiz
40	76.277M	52.1	+6.8 +1.6	+0.0	-28.3	+0.1	+0.0	32.3	40.0	-7.7	Horiz
41	665.304M	39.1	+0.0 +5.1	+21.4	-27.9	+0.4	+0.0	38.1	46.0	-7.9	Horiz
42	449.191M	46.2	+0.0 +4.0	+16.2	-28.7	+0.4	+0.0	38.1	46.0	-7.9	Horiz
43	760.337M	37.8	+0.0 +5.5	+22.0	-27.8	+0.4	+0.0	37.9	46.0	-8.1	Vert
44	599.988M	41.8	+0.0 +4.9	+18.9	-28.1	+0.4	+0.0	37.9	46.0	-8.1	Vert
45	37.586M QP	43.7	+15.4 +1.1	+0.0	-28.4	+0.1	+0.0	31.9	40.0	-8.1	Horiz
^	37.565M	47.2	+15.4 +1.1	+0.0	-28.4	+0.1	+0.0	35.4	40.0	-4.6	Horiz
47	550.061M	43.5	+0.0 +4.6	+17.9	-28.6	+0.4	+0.0	37.8	46.0	-8.2	Vert
48	80.786M	51.3	+7.0 +1.6	+0.0	-28.2	+0.1	+0.0	31.8	40.0	-8.2	Vert
49	330.042M	42.0	+0.0 +3.4	+20.2	-28.2	+0.3	+0.0	37.7	46.0	-8.3	Vert
50	61.664M	50.9	+7.9 +1.3	+0.0	-28.6	+0.1	+0.0	31.6	40.0	-8.4	Horiz
51	464.476M	45.2	+0.0 +4.1	+16.4	-28.6	+0.4	+0.0	37.5	46.0	-8.5	Horiz
52	104.989M	49.0	+12.5 +1.8	+0.0	-28.4	+0.1	+0.0	35.0	43.5	-8.5	Vert
53	320.067M	41.1	+0.0 +3.4	+20.9	-28.3	+0.3	+0.0	37.4	46.0	-8.6	Vert
54	100.088M	49.9	+11.5 +1.8	+0.0	-28.4	+0.1	+0.0	34.9	43.5	-8.6	Horiz

55	760.270M	37.1	+0.0 +5.5	+22.0	-27.8	+0.4	+0.0	37.2	46.0	-8.8	Horiz
56	200.046M	43.5	+16.8 +2.6	+0.0	-28.4	+0.2	+0.0	34.7	43.5	-8.8	Horiz
57	500.080M	43.9	+0.0 +4.4	+16.9	-28.5	+0.4	+0.0	37.1	46.0	-8.9	Horiz
58	665.285M	37.6	+0.0 +5.1	+21.4	-27.9	+0.4	+0.0	36.6	46.0	-9.4	Vert
59	449.235M	44.7	+0.0 +4.0	+16.2	-28.7	+0.4	+0.0	36.6	46.0	-9.4	Vert
60	105.047M	48.1	+12.5 +1.8	+0.0	-28.4	+0.1	+0.0	34.1	43.5	-9.4	Horiz
61	176.289M	42.2	+17.4 +2.4	+0.0	-28.2	+0.2	+0.0	34.0	43.5	-9.5	Vert
62	500.027M	43.2	+0.0 +4.4	+16.9	-28.5	+0.4	+0.0	36.4	46.0	-9.6	Vert
63	200.076M	42.7	+16.8 +2.6	+0.0	-28.4	+0.2	+0.0	33.9	43.5	-9.6	Vert
64	400.053M	45.0	+0.0 +3.8	+15.5	-28.3	+0.3	+0.0	36.3	46.0	-9.7	Vert
65	800.052M	36.1	+0.0 +5.7	+21.5	-27.6	+0.5	+0.0	36.2	46.0	-9.8	Vert
66	512.048M	42.6	+0.0 +4.4	+17.2	-28.5	+0.4	+0.0	36.1	46.0	-9.9	Vert
67	256.094M	42.6	+18.4 +3.0	+0.0	-28.2	+0.3	+0.0	36.1	46.0	-9.9	Horiz
68	272.122M	40.9	+19.8 +3.1	+0.0	-28.3	+0.3	+0.0	35.8	46.0	-10.2	Horiz
69	512.050M	42.2	+0.0 +4.4	+17.2	-28.5	+0.4	+0.0	35.7	46.0	-10.3	Horiz
70	65.106M	49.1	+7.5 +1.4	+0.0	-28.6	+0.1	+0.0	29.5	40.0	-10.5	Horiz
71	200.603M	41.7	+16.8 +2.6	+0.0	-28.4	+0.2	+0.0	32.9	43.5	-10.6	Horiz
72	100.001M	47.6	+11.5 +1.8	+0.0	-28.4	+0.1	+0.0	32.6	43.5	-10.9	Vert
73	61.294M QP	48.3	+7.9 +1.3	+0.0	-28.6	+0.1	+0.0	29.0	40.0	-11.0	Vert
^	61.242M	54.1	+7.9 +1.3	+0.0	-28.6	+0.1	+0.0	34.8	40.0	-5.2	Vert
75	331.834M	39.4	+0.0 +3.4	+20.0	-28.2	+0.3	+0.0	34.9	46.0	-11.1	Vert
76	384.091M	40.8	+0.0 +3.7	+16.5	-28.3	+0.3	+0.0	33.0	46.0	-13.0	Vert
77	200.504M	38.7	+16.8 +2.6	+0.0	-28.4	+0.2	+0.0	29.9	43.5	-13.6	Vert
78	96.095M	45.0	+10.6 +1.7	+0.0	-28.3	+0.1	+0.0	29.1	43.5	-14.4	Vert